

INTERAGENCY AGREEMENT

BETWEEN

THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

AND

THE DEPARTMENT OF HEALTH

FOR

ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS

September 10, 2001

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I. INTRODUCTION

The Department of Environmental Protection (DEP) and the Department of Health (DOH) enter into this Interagency Agreement, hereinafter referred to as Agreement, as set forth below. The purpose of this Agreement is to standardize administrative procedures and clarify responsibilities of DEP and its district offices and delegated local programs under Chapter 403, Florida Statutes (F.S.), and of DOH and its county health department (CHD) offices under Chapter 381, F.S., in regulating the use of onsite sewage treatment and disposal systems (OSTDS) and septage management facilities and disposal sites.

This Agreement supersedes and supplants the August 4, 1995 version of the Agreement. Either party may seek a modification of this Agreement by notifying the other in writing of its desire for a modification. No modification shall become effective until it has been signed by the Secretary of DEP and the Secretary of DOH or their respective designees. This Agreement shall remain in force and effect until revised by both Departments or terminated by either Department. If some or all of the Agreement is inconsistent with new statutes, that portion of the Agreement which is inconsistent shall no longer be effective. Any party wishing to terminate this Agreement shall inform the other of its desire to terminate at least 90 days prior to the effective date of the termination.

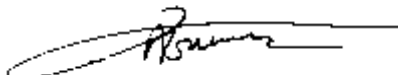
EXECUTED this 27 day of Sept., 2001

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION



David B. Struhs
Secretary

STATE OF FLORIDA DEPARTMENT
OF HEALTH



John O. Agwunobi, M.D., M.B.A.
Acting Secretary

II. DEFINITIONS

Definitions contained in this Agreement are provided to supplement and to clarify the definitions included in Chapters 64E-6 and the 62-600 series of the Florida Administrative Code (F.A.C.) in effect on the date this Agreement was executed. When definitions are not provided in this Agreement, the definitions included in Chapters 64E-6 and the 62-600 series of the F.A.C., shall be used.

1. Commercial Wastewater - non-toxic, non-hazardous wastewater from commercial establishments that is similar in composition to domestic wastewater, but which may occasionally have one or more of its constituents exceed typical domestic ranges. For the purposes of this Agreement, this definition is synonymous with the definition of “Commercial Sewage Waste” contained in Chapter 64E-6, F.A.C. Included in this definition are commercial wastewaters and mixtures of commercial and domestic wastewaters from commercial and institutional food service operations, commercial laundries with no more than four washing machines, animal holding facilities (such as commercial kennels, veterinary hospitals, and animal grooming facilities), and beauty salons, provided toxic, hazardous, or industrial wastes are not introduced into the system, using Attachment 1 as a guide.
2. Domestic Wastewater - for the purposes of this Agreement, the definition of “domestic wastewater” provided in Chapter 62-600, F.A.C., is synonymous to the definition of “domestic sewage waste” provided in Chapter 64E-6, F.A.C. Domestic wastewater includes wastes from portable toilets, holding tanks, boats, and marinas. Also included are domestic wastewaters from certain commercial and industrial establishments (excluding restaurants and other food service operations). All wastewaters from restaurants and other food service establishments are included in the definition of commercial wastewater.
3. Establishment - shall be as defined in Chapter 64E-6, F.A.C.
4. Estimated Sewage Flows - the quantity of domestic and commercial wastewater expected to be produced by an establishment as determined from Chapter 64E-6, F.A.C.
5. Existing Facilities - facilities for which a permit has been issued or a complete permit application was received by DEP or DOH prior to the effective date of this Agreement.
6. Industrial Wastewater - wastewater not otherwise defined as domestic wastewater or commercial wastewater. Wastewaters from dairies, food processing plants, slaughterhouses, funeral homes, car washes, and commercial laundries with more than four washing machines are included in this definition.

7. New Establishment - establishments constructed after or establishments for which a complete permit application was not received by DEP or DOH prior to the effective date of this Agreement.
8. Onsite Sewage Treatment and Disposal System (OSTDS) - shall be as defined in Section 381.0065, F.S. This term does not include package sewage treatment facilities and other treatment works regulated under Chapter 403, F.S. Further, the term does not include any system which provides for other than subsurface effluent disposal or which has open tanks or open treatment units.
9. Residuals - shall be as defined in Chapter 62-640, F.A.C. Septage and food establishment sludges are excluded from this definition.
10. Residuals Management Facility - shall be as defined in Chapter 62-640, F.A.C.
11. Septage - shall be as defined in Chapters 64E-6 and 62-640, F.A.C. Wastes from boats or marinas are excluded from this definition.
12. Septage Management Facility - shall be as defined in Chapter 62-640, F.A.C.
13. Sewage - the definition of “sewage” is synonymous to the definitions of “domestic wastewater” and “domestic sewage waste”.

III. REGULATORY RESPONSIBILITIES

A. Onsite Sewage Treatment and Disposal Systems

1. New Establishments

- a. New establishments shall be regulated in accordance with the jurisdictional flow limits specified in Chapter 381.0065, Florida Statutes.
- b. New commercial laundry facilities with no more than four washing machines shall be regulated by DOH provided an OSTDS is proposed and feasible. All other laundry facilities shall be regulated by DEP as industrial wastewater facilities, regardless of flow.
- c. New establishments producing industrial wastewater shall be regulated by DEP except as provided in Part III.A.4. of this Agreement.

2. Existing Establishments

- a. Existing establishments, currently regulated by DEP, treating domestic wastewater, and having permitted capacities of 10,000 gallons per day or less, will continue to be regulated by DEP unless the permittee requests otherwise, DEP concurs in writing, and a DOH variance is granted. If a DOH variance is granted, DOH shall be the permitting authority provided that an OSTDS is proposed in accordance with Chapter 64E-6, F.A.C.
- b. Existing establishments, currently regulated by DEP, treating commercial wastewater, and having permitted capacities of 5,000 gallons per day or less, will continue to be regulated by DEP unless the permittee requests otherwise, DEP concurs in writing, and a DOH variance is granted. If a DOH variance is granted, DOH shall be the permitting authority provided that an OSTDS is proposed in accordance with Chapter 64E-6, F.A.C.
- c. If a variance is granted in accordance with 2.a. or 2.b. above, all previously constructed facilities not meeting the definition of an OSTDS, such as package plants, shall be abandoned or modified to meet the requirements of Chapter 64E-6, F.A.C., and this Agreement. CHDs will consult with the appropriate DEP district office when portions of the DEP regulated facility are proposed to be incorporated into the DOH regulated facility. In accordance with Rule 62-600.410, F.A.C., the permittee shall provide the appropriate DEP district office with written notice at least 60 days before abandonment. The CHD will notify the appropriate DEP district office when the OSTDS is given final installation approval. The appropriate DEP district office will inspect the site to ensure that the permittee has

taken all necessary steps to abandon wastewater facilities which are not regulated by Chapter 64E-6, F.A.C.

- d. When either agency discovers an existing establishment having a sewage flow entering a DOH-regulated OSTDS and the establishment's estimated sewage flow exceeds the jurisdictional flow limits in 381.0065, F.S., it will notify the other agency of the matter. The agencies agree to jointly notify the facility owner of any violations requiring correction and provide an appropriate timeframe for correction. At the end of that timeframe, the agency having final jurisdiction shall take necessary enforcement action for any remaining violations.
 - e. Existing establishments having unpermitted wastewater facilities shall be regulated as new establishments.
- 3. DOH may exceed the jurisdictional flow limits established in Items 1 and 2 above provided DEP states in writing that an OSTDS is more appropriate for the establishment and a variance has been granted by DOH in accordance with s. 381.0065, F.S. Attachment 2 may be used as a guide by DEP districts to provide such a written statement. This statement shall be part of the DOH variance application.
 - 4. DEP may, on a case-by-case basis, refer to DOH for permitting an establishment generating wastewater flows 5,000 gallons per day or less with wastewater characteristics otherwise defined as industrial wastewater but amenable to being treated by an OSTDS. DOH will consider accepting jurisdiction via the variance process. If DOH ultimately denies the variance, DEP shall retain jurisdiction. Attachment 3 may be used as a guide by DEP districts to provide the applicant notice of a waiver allowing DOH to take jurisdiction provided that DEP has reviewed the application and design documents to ensure the wastewater will be amenable to being treated by an OSTDS. This letter shall be included in the DOH variance application.
 - 5. Except in the case of marina pumpout facilities described in Part 3.C. of this Agreement, if an establishment's domestic wastewater flow is treated by a DEP regulated treatment facility then the establishment's entire domestic wastewater flows shall be regulated by the DEP and no portion shall be permitted by the DOH without prior approval by the DEP and unless a DOH variance is granted.

B. Industrial and Manufacturing Areas

The following procedures shall apply in an area zoned or used for an industrial or manufacturing purpose:

1. The CHD will determine whether the publicly owned or investor owned sewerage system is available per the definition provided in Chapter 64E-6, F.A.C. The CHD will verify whether the sewerage system is available when an OSTDS permit applicant claims that a sewerage system is not available because it is under a DEP moratorium or does not have adequate permitted capacity to accept the wastewater generated by the establishment.
2. If an available publicly owned or investor owned sewerage system does not exist, the CHD will evaluate the OSTDS permit application to determine whether the establishment may generate toxic, hazardous, or industrial waste, using Attachment 1 as a guide.

If the CHD is satisfied that the establishment will not generate toxic, hazardous, or industrial wastes; the estimated sewage flow for the establishment does not exceed 5,000 gallons of commercial wastewater per day or 10,000 gallons of domestic wastewater per day; and the OSTDS complies with all other requirements of Chapter 64E-6, F.A.C., the CHD shall permit the OSTDS and retain regulatory responsibility.

If the CHD determines that the establishment may generate toxic, hazardous, or industrial wastes then the CHD will send a copy of the OSTDS permit application, within five working days of receipt, to the Industrial Wastewater Section of the appropriate DEP district office for review. Within twenty days of receipt of the application, the DEP district office agrees to review the application and appropriate documentation and advise the CHD and the applicant whether there is a likelihood that the OSTDS will receive these types of wastes. The district will also inform the CHD whether the establishment will be required to obtain a DEP permit for an industrial wastewater treatment facility for the industrial components of the establishment's wastewater. The CHD may permit an OSTDS only after receiving written notice from DEP through the applicant that there are no known sources of toxic, hazardous or industrial wastewater to the OSTDS. Attachment 4 may be used as a guide by DEP districts to provide such written notice. The CHD may also permit an OSTDS provided a waiver of jurisdiction is given by DEP in accordance with Part III.A.4. of this Agreement. If a DEP permit will be required, the CHD will notify the OSTDS permit applicant that contact should be made with the appropriate DEP district office for information on how to obtain the DEP permit.

3. In the exclusive case of warehouse and dry goods storage facilities without floor drains and having centralized restroom facilities not readily accessible or convenient for disposal of non-domestic wastewater, if an available publicly owned or investor owned sewerage system does not exist the CHDs will assume regulatory responsibility for wastewater flows not exceeding 5,000 gallons of commercial wastewater per day or 10,000 gallons of domestic wastewater per day provided that an OSTDS is the proposed method of treatment. It is the intent of

this section that DOH can assume regulatory responsibility for domestic wastewater at the above referenced facilities because these facilities can reasonably be assumed not to generate industrial, toxic or hazardous waste. This concept applies even if there is other plumbing in the facility besides centralized restrooms such as mop sinks, etc.

C. Marina Pumpout Facilities

1. For purposes of this Agreement, permitting of marina pumpout facilities applies only to on-shore facilities and does not include facilities on vessels. Discharges or spills from vessels to waters of the state are subject to enforcement by the Florida Marine Patrol.
2. At marinas where the domestic wastewater is disposed of using a DOH-regulated OSTDS, the marina pumpout facilities will be served by a DOH-regulated holding tank. At marinas where the domestic wastewater is discharged into a DEP-regulated collection/transmission system appurtenant to an offsite wastewater treatment facility, and the facility objects to the introduction of marina pumpout wastes into the treatment facility, the marina pumpout facilities will be served by a DOH-regulated holding tank. The contents of any holding tank receiving wastes from marina pumping facilities shall be transported by a DOH licensed hauler to a DEP-regulated wastewater treatment facility for further treatment and ultimate disposal.
3. At marinas where the flow from the marina pumpout facilities is combined with the domestic wastewater and is treated by a DEP-regulated wastewater treatment facility, the marina pumpout facilities will be served by the wastewater treatment facility. At marinas where the domestic wastewater is treated by a DEP-regulated wastewater treatment facility at the marina site, and the facility objects to the introduction of marina pumpout wastes into the treatment facility, the marina pumpout facilities will be regulated by DEP.
4. Regulatory responsibility for an OSTDS or a wastewater treatment facility located at a marina shall be determined based on the establishment's domestic wastewater flow, including the flow to any on-site holding tanks from marina pumpout facilities. For jurisdictional flow purposes, it will be assumed that the average boat holding tank has a capacity of 15 gallons. The criteria contained in Attachment 5, which was developed by the U.S. Department of the Interior, will be used as guidance to review these facilities.

D. Septage and Residuals

1. All residuals management facilities shall be regulated by DEP in accordance with DEP rules. The land application of residuals from these facilities shall be at sites approved by DEP in accordance with DEP rules.

2. Septage management facilities shall be regulated as follows:

- a. Jurisdictional flows at septage management facilities shall be based on the monthly average daily volume the facility intends to treat as indicated on the application form for a septage management facility permit.
- b. Septage management facilities intending to treat 10,000 gallons or less per day monthly average daily flow of septage shall be regulated by DOH in accordance with DOH rules. Such facilities shall not treat more than 20,000 gallons of septage on any one day. The 10,000 and 20,000 gallons per day limits apply to the total flows from the entire facility. The land application of septage from these facilities shall be at sites regulated and approved by DOH in accordance with DOH rules.
- c. Septage management facilities intending to treat more than 10,000 gallons per day monthly average daily flow or more than 20,000 gallons in a single day of septage shall be regulated by DEP in accordance with DEP rules. The land application of septage from these facilities shall be in accordance with DEP rules.
- d. All septage management facilities shall report to the appropriate regulatory agency the amount of septage treated at the facility during the reporting period.
- e. If a DEP permitted septage management facility treats less than 10,000 gallons per day on an annual average basis and has no single days in excess of 20,000 gallons of septage, as shown on the monthly operating reports, the facility may request from DEP a transfer of jurisdiction to DOH. DEP will notify DOH of the request and if both agencies concur, DOH will notify the facility that DOH approval must be obtained.
- f. If a DOH regulated septage management facility treats an average of more than 10,000 gallons per day during a reporting period, DOH will notify the permittee that if the facility treats more than 10,000 gallons per day on an annual average basis, a DEP permit will be required. If a DOH regulated septage management facility treats more than 10,000 gallons per day of septage on an annual average basis, DOH will notify the permittee that a DEP permit is required.

If a DOH regulated septage management facility treats more than 20,000 gallons of septage on a single day during a reporting period, DOH will notify the permittee that if the 20,000 gallon single day limit is exceeded more than once during a year a DEP permit will be required. If the 20,000

gallon single day limit is exceeded more than once during a year, DOH will notify the permittee that a DEP permit is required.

- g. If a septage management facility treating 10,000 gallons per day monthly average daily flow or less of septage proposes to expand to treat more than 10,000 gallons per day or more than 20,000 gallons on any single day, the facility's owner or authorized representative will need to apply for and obtain a DEP permit prior to the expansion.
- 3. Septage management facilities approved by DOH will not accept residuals. Any combination of residuals and septage, food establishment sludge, or waste from portable toilets, holding tanks, boats, or marinas will be subject to DEP regulation.
- 4. Residuals management facilities and septage management facilities shall not accept sludges from industrial wastewater facilities such as dairies, food processing plants, funeral homes, and car washes unless specifically authorized by the appropriate regulatory agency.
- 5. The use of any chemicals or processes, other than lime stabilization, will be reviewed and approved in writing by both the DOH State Health Office and the DEP's Domestic Wastewater Section in Tallahassee prior to being used for septage stabilization at DOH permitted septage management facilities.
- 6. Septage that has received proper treatment at septage management facilities approved by DOH may be land applied on the same site as residuals that have received proper treatment. However, it is strongly encouraged that residuals and septage be applied to separate areas of the site and remain segregated at all times to facilitate recordkeeping and liability. However, if not segregated, the Agriculture Use Plans should account for the nitrogen being applied by each source.

E. Permitting

- 1. An appropriate permit must be obtained from either DEP or DOH for new domestic or commercial wastewater facilities. If DEP or DOH receives a permit application for a facility that is not within the agency's jurisdiction, the applicant will be informed by letter that the agency does not have regulatory authority to issue the permit. A copy of the letter will be sent to the appropriate CHD or DEP district office.
- 2. DOH shall not permit an OSTDS which provides for other than subsurface effluent disposal.

3. DOH shall only permit OSTDSs which have closed tanks and closed treatment units. DOH shall not permit package treatment plants or any other treatment works designed to meet the treatment requirements of Chapter 403, F.S.
4. DOH or DEP agrees to not transfer, either directly or indirectly, jurisdiction of any system which is regulated by it, to the other agency without the prior written concurrence of the receiving agency.
5. CHDs will consult with the appropriate DEP district office on applications for construction permits proposing to use a single aerobic treatment unit (ATU) to handle flows exceeding 1,500 gallons per day. Coordination with DEP will take place prior to a CHD taking any permit action. Consultation will be for the purpose of insuring that the ATU is in compliance with sections E. 2. and E. 3. of this agreement and meets the Chapter 381, F.S., definition of an OSTDS. DEP will respond to the CHD within 10 working days of the CHD request. In cases where total establishment wastewater flow exceeds 1,500 gallons per day and the flow is to be divided into two or more ANSI/NSF Class I ATUs, each intended to handle less than 1,500 gallons per day, consultation with DEP is not required provided the establishment's total wastewater flow does not exceed 10,000 gallons of domestic wastewater per day or 5,000 gallons of commercial wastewater per day.
6. Under the provisions of Part II, Chapter 64E-6, F.A.C., DOH shall regulate individual Class V injection wells where estimated daily domestic sewage flow will not exceed 2,000 gallons per day. DEP shall regulate all other Class V injection wells in accordance with its Underground Injection Control Program.

F. Compliance and Enforcement

1. Whenever either agency receives a complaint about an OSTDS, the appropriate CHD will be notified so that the complaint may be investigated by that CHD. The CHD, DEP district office, or local program having regulatory responsibility over the system shall take appropriate enforcement action.
2. In the event of frequent or widespread OSTDS system failures in a community or geographic area, the appropriate CHD and DEP district office agree to jointly investigate the cause of the system failures and cooperate in efforts to provide satisfactory resolution of the identified problems.
3. Whenever either agency receives a complaint about a site where both residuals and septage are land applied on the same site, and the septage is treated at an DOH regulated stabilization facility, the agency receiving the complaint will make the initial investigation and coordinate with the other agency regarding compliance and enforcement actions. The two agencies agree to work together to resolve any problems found at the site.

G. Administrative

1. The DOH State Health Office and the DEP Domestic Wastewater Section in Tallahassee agree to hold jointly meetings at least once a year to discuss current situations associated with regulatory responsibilities and issues of mutual concern. The appropriate section administrators will be the contact persons to arrange the meeting.
2. The DOH State Health Office and the DEP Domestic Wastewater Section in Tallahassee will exchange the following information during the annual meeting. All information will be identified by the CHD and DEP districts.
 - a. A list of all permitted residuals and septage treatment facilities within their respective jurisdictions.
 - b. A list of all approved residual and/or septage land application sites including the latitudes and longitudes within their respective jurisdictions.
 - c. A list of all enforcement cases pertaining to septage or residuals hauling or land application sites.
 - d. A list of known septage or residuals haulers.
 - e. DOH will provide to DEP a list of all septage management facilities with annual average daily flows in excess of 10,000 gallons per day including the actual annual average daily flow for each facility. The list will also contain all septage management facilities with a single day exceeding 20,000 gallons.

The two agencies will work to maximize ease of information exchange including electronic data transfer.

3. Both DEP and DOH commit to providing adequate training to personnel in their respective district offices, local programs, and CHDs to ensure implementation of this Agreement.

IV. REFERENCES

Aerobic Treatment Units

[Rule 64E-6.012, F.A.C.] [Agreement – Section III. E. 5.]

Animal Holding Facilities

[Rule 64E-6.002 (13), F.A.C.] [Rule 62-620.200(6), F.A.C.]

Available Publicly Owned or Investor-owned Sewerage Systems

[Rule 64E-6. 002(9), F.A.C.] [Agreement - Section III. B.]

Boat Wastes

[Agreement - Sections II. 2. and 11. and Sections III. C. and D. 3.]

Car Washes

[Rule 62-660.803, F.A.C.] [Agreement - Section II. 6. and Section III. D. 4.]

Commercial Laundry Facilities

[Rule 64E-6.002(13) and (29), F.A.C.] [Rule 62-620.200(6), F.A.C.] [Agreement - Section III. A. 1. b.]

Commercial Wastewater

[Rule 64E-6.002(13), F.A.C.] [Rule 62-620.200(6), F.A.C.] [Agreement - Section II.1. and Sections III. A. and E.]

Domestic Wastewater

[Rule 62-600.200(25), F.A.C.] [Rule 62-620.200(15), F.A.C.] [Rule 64E-6.002(15), F.A.C.] [Agreement - Section II. 2. and Sections III. A. and E.]

Domestic Wastewater Facilities

[Rule 62-620.100, F.A.C.] [Rule 62-620.200(37), F.A.C.] [Agreement - Sections III. A. and E.]

Food Establishment Sludge

[Rule 64E-6.002(27), F.A.C.] [Rule 64E-6.010, F.A.C.] [Agreement - Section III. D.]

Food Processing Plants

[Chapter 62-660, F.A.C.] [Agreement - Section II. 6. and Section III. D. 4.]

Food Service Operations

[Rule 64E-6.002(13), F.A.C.] [Rule 62-620.200(6), F.A.C.] [Agreement - Section II. 1.]

Grease Interceptor

[Rule 64E-6.002(27), F.A.C.]

Holding Tanks

[Rule 64E-6.010, F.A.C.] [Agreement - Section II. 2. and Sections III. C. and III. D.]

Industrial and Manufacturing Areas

[Rule 64E-6.003(5), F.A.C.] [Agreement - Section III. B.]

Industrial Wastewater

[Rule 62-620.200(21), F.A.C.] [Rule 64E-6.002(29), F.A.C.] [Agreement - Section II. 6. and Section III. A.]

Industrial Wastewater Facilities

[Rule 62-620.100, F.A.C.] [Rule 62-620.200(21) and (36), F.A.C.] [Agreement - Sections III. A. and B.]

Injection Wells

[Rule 64E-6.017(3), F.A.C.] [Chapter 62-528, F.A.C.] [Agreement – Section III. E. 6.]

Lime Stabilization

[Rule 62-640.600(1)(c), F.A.C.] [Rule 64E-6.010, F.A.C.] [Agreement - Section III. D.]

Marina Pumpout Facilities

[Agreement - Section III. C.]

Marina Wastes

[Agreement - Sections II. 2. and 11. and Sections III. C. and D. 3.]

Mobile Home Park

[Rule 64E-6.002(22), F.A.C.]

Portable Toilets

[Rule 64E-6.010, F.A.C.] [Agreement - Section II. 2. and Section III. D. 3.]

Recreational Vehicle Park

[Rule 64E-6.002(22), F.A.C.]

Residuals

[Chapter 62-640 F.A.C.] [Agreement - Section II. 9. and Sections III. D., F. 3., and G. 2.]

Residuals Management Facilities

[Rule 62-640.200(32), F.A.C.] [Rule 62-640.880, F.A.C.] [Agreement - Section II. 10. and Sections III. D. and G. 2.]

Restaurants

[Agreement - Section II.1.]

Septage

[Rule 64E-6.002(48), F.A.C.] [Rule 64E-6.010, F.A.C.] [Rule 62-640.200(34), F.A.C.] [Rule 62-640.880(6), F.A.C.] [Agreement - Section II. 11. and Sections III. D., F. 3., and G. 2.]

Septage Management Facilities

[Rule 64E-6.010, F.A.C.] [Rule 62-640.200(34), F.A.C.] [Rule 62-640.880(6), F.A.C.] [Agreement - Section II. 12. and Sections III. D. and G. 2.]

Estimated Sewage Flow

[Rule 64E-6.008(1), F.A.C.] [Agreement - Section II. 4. and Section III. A.]

Surface Water Discharge

[Rule 64E-6.005, F.A.C.] [Rule 62-600.500, F.A.C.] [Agreement - Section III. E. 2.]

ATTACHMENT 1

LIST OF POTENTIAL TOXIC, HAZARDOUS, AND INDUSTRIAL WASTE GENERATORS

A	Waste pesticides
B	Washing and rinsing solutions containing pesticides
C	Empty pesticides containers
D	Spent toxaphene solutions or sludges from dipping
E	Spent pesticide solutions or sludges other than toxaphene from dipping
F	Dust containing heavy metals
G	Washings and rinsing solutions containing heavy metals
H	Wastewater treatment sludges containing heavy metals
I	Waste ink
J	Ignitable paint wastes containing flammable solvents (flash point less than 1400F)
K	Liquid paint wastes containing heavy metals (cadmium, chromium, mercury, or lead)
L	Spent solvents
M	Still bottoms from the distillation of solvents
N	Filtration residues from dry cleaning operations
O	Cyanide wastes
P	Strongly acidic or alkaline wastes
Q	Spent plating wastes
R	Waste ammonia
S	Photographic wastes
T	Ignitable wastes (flash point less than 1400F)
U	Wastewater sludges containing pentachlorophenol, creosote, or arsenic
V	Waste formaldehyde
W	Lead-acid batteries
X	Waste explosives
Y	Waste oil
Z	Other

LIST OF POTENTIAL HAZARDOUS WASTE GENERATORS BY SIC CODE*

SIC Code	Waste Types	Description
<u>0115-0783: Agricultural</u>		
0115	ABC	Corn
0131	ABC	Cotton
0132	ABC	Tobacco
0133	ABC	Sugar Crops
0161	ABC	Vegetable and Melon Farmers
0171	ABC	Berry Crops
0174	ABC	Citrus Fruit Growers
0181	ABC	Ornamental Floriculture and Nursery Products
0191	ABC	General Farms, Primary Crop
0211	ABC	Beef Cattle Feedlots
0212	ABC	Beef Cattle, except Feedlots (e.g., Ranches)
0214	ABC	Sheep and Goat Farms
0291	ABC	General Livestock
0711	ABCY	Soil Preparation services
0721	ABCY	Crop Planting, Cultivation, and Protection
0722	LPWY	Crop Harvesting, Primarily by Machine
0724	YZ	Cotton Ginning
0729	AY	General Crop Services
0751	A	Livestock Services, except for Animal Specialties
0782	A	Lawn and Garden Services
0783	AY	Ornamental Shrub and Tree Services
<u>0811-0851: Forestry</u>		
0811	ABC	Timber Tracts
0821	ABC	Forest Nurseries, and Tree Seed Gathering and Extracting
0851	ABCY	Forestry Services
<u>1611-1799: Construction</u>		
1611	LPWXY	Highway and Street Construction
1622	LPWXY	Bridge, Tunnel, and Elevated Highway Construction
1711	PT	Plumbing, Heating (except Electric), and Air conditioning
1721	JKLT	Painting, Paper Hanging, and Decorating, Heavy Construction, NEC*

* NEC = Not elsewhere classified

SIC Code	Waste Types	Description
1743	LT	Terrazzo, Tile, Marble, and Mosaic Work
1752	JKLT	Floor Laying and other Floorwork, NEC*
1761	LT	Roofing and Sheet Metal Work
1793	LT	Glass and Glazing Work
1794	LPWY	Excavating and Foundation Work
1799	JKLPWY	Special Trade Contractors

2032-3999: Manufacturing Industries

2032	GHJLM	Canned Specialties
2091	GHJLM	Canned and Cured Fish and Seafoods
2231	LM	Broad Woven Fabric Mills, Wool
2251	LM	Women's Full Length and Knee Hosiery
2252	LM	Hosiery except Women's Full and Knee Lengths
2253	LM	Knit Outerwear Mills
2254	LM	Knit Underwear Mills
2257	LM	Circular Knit Fabric Mills
2258	LM	Warp Knit Fabric Mills
2259	LM	Knitting Mills, NEC*
2261	LM	Finishers of Broad Woven Fabrics of Cotton
2262.	LM	Finishers of Broad Woven Fabrics of Manmade Fiber and Silk
2269	LM	Finishers of Broad Woven Fabrics, Manmade Fiber and Silk
2271	LM	Woven Carpets and Rugs
2272	LM	Tufted Carpets and Rugs
2279	LM	Carpets and Rugs, NEC*
2434	JKLT	Wood Kitchen Cabinets
2435	JKLT	Hardwood Veneer and Plywood
2436	JKLT	Softwood Veneer and Plywood
2451	JKLT	Mobile Homes
2452	JKLT	Prefabricated Wood Buildings and Components
2491	H	Wood Preserving
2492	LTY	Particleboard
2511	JLMT	Wood Household Furniture, except Upholstered
2514	HLOPQ	Metal Household Furniture
2517	JKLMT	Wood TV and Radio Cabinets
2519	JKLMT	Household Furniture, NEC*
2521	JKLMT	Wood Office Furniture
2522	HLMOP	Metal Office Furniture

* NEC = Not elsewhere classified

SIC Code	Waste Types	Description
2541	JKLMT	Wood Partitions and Fixtures
2543	HLMOPQ	Metal Partitions and Fixtures
2611	LMPTY	Pulp Mills
2621	LMPTY	Paper Mills, except Building Paper Mills
2631	LMPTY	Paperboard Mills
2641	ILP	Paper Coating and Glazing
2643	ILP	Bags, except Textile Bags
2645	ILP	Die-Cut Paper and Paperboard and Cardboard
2646	ILP	Pressed and Molded Pulp Goods
2649	ILP	Converted Paper and Paperboard Products, NEC*
2651	ILP	Folding Paperboard Boxes
2652	ILP	Set-up Paperboard Boxes
2653	ILP	Corrugated and Solid Fiber Boxes
2654	ILPY	Sanitary Food Containers
2655	ILPY	Fiber Cans, Tubes, Drums, and Similar Products
2661	LMPTY	Building Paper and Building Board Mills
2711	HILOPQ	Newspapers: Publishing and Printing
2721	HILOPQ	Periodicals: Publishing and Printing
2731	HILOPQ	Books: Publishing and Printing
2732	HILOPQ	Book Printing
2751	HILOPQ	Commercial Printing, Letterpress and Screen
2752	HILOPQ	Commercial Printing, Lithographic
2753	HILOPQ	Engraving and Plate Printing
2754	HILOPQ	Commercial Printing, Gravure
2761	HILOPQ	Manifold Business Forms
2771	HILOPQ	Greeting Card Publishing
2782	HILOPQ	Blankbooks, Looseleaf Binders, and Devices
2789	HILOPQ	Bookbinding and Related Work
2791	HILOPQ	Typesetting
2812	ABCGHLMPTY	Alkalies and Chlorine
2816	FOPY	Inorganic Pigments
2819	FOPQRSY	Industrial Inorganic Chemicals, NEC*
2821	LMTY	Plastics, Materials, Synthetic Resin, and Non-vulcanizable Elastomers
2822	LMTY	Synthetic Rubber
2823	LMTY	Cellulosic Manmade Fibers
2824	LMTY	Synthetic Organic Fibers, except Cellulosic
2831	LMT	Biological Products
2833	ALMPT	Medicinals and Botanicals
2834	LP	Pharmaceutical Preparations

* NEC = Not elsewhere classified

SIC Code	Waste Types	Description
2841	FLMTY	Soap and other Detergents, except Specialty Cleaners
2842	ALMPY	Specialty Cleaners, Polishes, and Sanitation Preparations
2843	FLMTY	Surface Active Agents, Finishing Agents, Sulfonated Oils, and Assistants
2844	FLTY	Perfumes, Cosmetics, and other Toilet
2851	FGLMPY	Preparations Paint and Allied Products
2861	LMPTY	Gum and Wood
2865	FGHILMPY	Chemicals, Cyclic (Coal Tar) Crudes, and Cyclic Intermediates, Dyes, and Organic Pigments (Lakes and Toners)
2869	LMPTY	Industrial Organic Chemicals, NEC*
2873	GHPRT	Nitrogenous Fertilizers
2879	ABCLMY	Pesticides and Agricultural Chemicals, NEC*
2891	LMPT	Adhesives and Sealants
2892	FGHLMTX	Explosives
2893	FGLMP	Printing Ink
2899	LMOPTY	Chemical Preparations
2911	GHLPT	Petroleum Refining
2952	P	Asphalt Felts and Coatings
2992	GHT	Lubricating Oils and Greases
2999	PT	Products of Petroleum and Coal, NEC*
3079	JLMY	Miscellaneous Plastic Products
3111	L	Leather Tanning and Finishing
3131	L	Boot and Shoe Cut Stock and Findings
3151	L	Leather Gloves and Mittens
3144	L	Women's Footwear, except Athletic
3161	L	Luggage
3171	L	Women's Handbags and Purses
3172	L	Personal Leather Goods
3199	L	Leather Goods, NEC*
3211	FT	Flat Glass
3251	JKL	Brick structural Clay Tile
3253	JYL	Ceramic Wall and Floor Tile
3261	JKL	Vitreous China Plumbing Fixtures and Bathroom Accessories
3262	JKL	Vitreous China Table and Kitchen Articles
3263	JYL	Fine Earthenware (Whiteware) Table and Kitchen Articles
3264	JKL	Porcelain Electrical Supplies

* NEC = Not elsewhere classified

SIC Code	Waste Types	Description
3269	JYL	Pottery Products, NEC*
3291	T	Abrasive Products
3293	LT	Gaskets, Packing and Sealing Devices
3312	FGHLMOPQTY	Blast Furnaces, Steel Works, and Rolling Mills
3313	LMPY	Electrometallurgical Products
3315	GHLMOPTY	Steel Wire Drawing and Steel Nails and Spikes
3316	GPY	Cold Rolled Steel Sheet, Strip, and Bars
3317	GHLMPY	Steel Pipe and Tubes
3321	GHLMPY	Gray Iron Foundries
3322	GHLMPY	Malleable Iron Foundries
3325	GHLMPY	Steel Foundries, NEC*
3332	GHLMPY	Primary Smelting and Refining of Lead
3333	GHLMPY	Primary Smelting and Refining of Zinc
3334	GHLMTY	Primary Production of Aluminum
3339	FGHJKLMOPQTY	Primary Smelting and Refining of Nonferrous Metals, NEC*
3341	FGHJKLMOPQTY	Secondary Smelting and Refining of Nonferrous Metals
3351	HMOPQY	Rolling, Drawing and Extruding of Copper
3353	HMOPQY	Aluminum Sheet, Plate and Foil
3354	HMOPQY	Aluminum Extruded Products
3355	HMOPQY	Aluminum Rolling and Drawing, NEC*
3356	HMOPQY	Rolling, Drawing and Extruding of Nonferrous Metal, Except Copper and Aluminum
3357	HMOPQY	Drawing and Insulating of Nonferrous Wire
3361	GHLMY	Aluminum Foundries (Casting)
3362	GHLMTY	Brass, Bronze, Copper and Copper Base Alloy Foundries
3369	LMTY	Nonferrous Foundries (Castings), NEC*
3398	HMOPQY	Metal Heat Treating
3399	HMOPQY	Primary Metal Products, NEC*
3411	HMOPQY	Metal Cans
3412	HMOPQY	Metal Shipping Barrels, Drums, Kegs, and Pail (Drum Refinishing)
3421	HMOPQ	Cutlery
3423	HMOPQY	Hand and Edge Tools, except Machine Tools and Hand Saws
3425	HMOPQY	Hand Saws and Saw Blades
3429	HMOPQY	Hardware, NEC*
3431	HMOPQY	Enameled Iron and Metal Sanitary Ware

* NEC = Not elsewhere classified

SIC Code	Waste Types	Description
3432	HLMOPQY	Plumbing Fixture Fittings and Trim (Brass Goods)
3433	HLMOPQY	Heating Equipment, except Electric and Warm Air Furnaces
3441	HLMOPQY	Fabricated Structural Metal
3442	HLMOPQY	Metal Doors, Sash, Frames, Molding, and Trims
3443	HLMOPQY	Fabricated Plate Work
3444	HLMOPQY	Sheet Metal Work
3446	HLMOPQY	Architectural and Ornamental Metal Work
3448	HLMOPQY	Prefabricated Metal Buildings and Components
3449	HLMOPQY	Miscellaneous Metal Work
3451	HLMOPQY	Screw Machine Products
3452	HLMOPQY	Bolts, Nuts, Screws, Rivets, and Washers
3462	HLMOPQY	Iron and Steel Forgings
3465	HLMOPQY	Automotive Stamping
3469	HLMOPQY	Metal Stamping, NEC*
3471	HLMOPQY	Electroplating, Polishing, Plating, Anodizing, and Coloring
3479	HLMOPQY	Coating, Engraving, and Allied Services, NEC*
3482	GHLMP TX	Small Arms Ammunition
3483	GHLMP TX	Ammunition, except for Small Arms, NEC*
3489	GHLMP TX	Ordnance and Accessories, NEC*
3511	HLMOPQ	Steam, Gas, and Hydraulic Turbines
3519	HLMOPQY	Internal Combustion Engines, NEC*
3523	HLMOPQY	Farm Machinery and Equipment
3524	HLMOPQY	Garden Tractors, and Lawn and Garden Equipment
3531	HLMOPQY	Construction Machinery and Equipment
3532	HLMOPQY	Mining Machinery and Equipment, except Oil Field
3533	HLMOPQY	Oil Field Machinery and Equipment
3535	HLMOPQ	Conveyers and Conveying Equipment
3537	HLMOPQY	Industrial Trucks, Tractors, Trailers, and Stackers
3541	HLMOPQY	Machine Tools, Metal Cutting
3542	HLMOPQY	Machine Tools, Metal Forming
3544	HLMOPQY	Special Dies and Tools, Die Sets, Jigs and Fixtures, and Industrial Molds
3545	HLMOPQY	Machine Tool Accessories and Measuring Devices
3546	HLMOPQY	Power Driven Hand Tools
3549	HLMOPQY	Metal Working Machinery, NEC*
3551	HLMOPQY	Food Products Machinery
3552	HLMOPQY	Textile Machinery
3553	HLMOPQY	Woodworking Machinery

* NEC = Not elsewhere classified

SIC Code	Waste Types	Description
3554	HLMOPQY	Paper Industries Machinery
3555	HLMOPQY	Printing Trades Machinery and Equipment
3559	HLMOPQY	Special Industry Machinery, NEC*
3561	HLMOPQY	Pumps and Pumping Equipment
3562	HLMOPQY	Ball and Roller Bearings
3563	HLMOPQ	Air and Gas Compressors
3564	HLMOPQ	Blower and Exhaust Ventilation Fans
3567	HLMOPQY	Industrial Process Furnace and Ovens
3568	HLMOPQY	Mechanical Power Transmission Equipment, NEC*
3569	HLMOPQY	General Industrial Machinery and-Equipment, NEC*
3573	HLMOPQ	Electronic Computing Equipment
3574	HLMOPQ	Calculating and Accounting Machines, except Electronic Equipment
3579	HLMOPQ	Office Machines, NEC*
3582	HLMOPQY	Commercial Laundry, Dry Cleaning, and Pressing Machines
3585	HLMOPQ	Air Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment
3586	HLMOPQ	Measuring and Dispensing Pumps
3589	HLMOPQ	Service Industry Machines, NEC*
3592	HLMOPQY	Carburetors, Pistons, Rings, and Valves
3599	HLMOPQY	Machinery, except Electrical, NEC*
3612	HLMOPQY	Power, Distribution and Specialty Transformers
3613	HLMOPQ	Switchgear and switchboard Apparatus
3621	HLMOPQ	Motors and Generators
3622	HLMOPQ	Industrial Controls
3623	HLMOPQ	Welding Apparatus, Electric
3624	HLMOPQ	Carbon & Graphite Products
3629	HLMOPQ	Electrical Industrial Apparatus, NEC*
3632	HLMOPQ	Household Refrigerators, and Home and Farm Freezers
3634	HLMOPQ	Electrical-Housewares and Fans
3636	HLMOPQ	Sewing Machines
3639	HLMOPQ	Household Appliances, NEC*
3641	HLMOPQ	Electric Lamps
3643	HLMOPQ	Current-Carrying Wire Devices
3645	HLMOPQ	Residential Electric Lighting Fixtures
3646	HLMOPQ	Commercial, Industrial, and Institutional Lighting Fixtures

* NEC = Not elsewhere classified

SIC Code	Waste Types	Description
3647	HLMOPQ	Vehicular Lighting Equipment
3651	HLMOPQ	Radio and Television Receiving Sets
3652	HLMOPQ	Phonographic Records and Pre-recorded Magnetic Tape
3662	HLMOPQ	Radio and Television Transmitting, Signaling, and Detection Equipment and Apparatus
3674	HLMOPQ	Semiconductors and Related Devices
3675	HLMOPQ	Electronical Capacitors
3677	HLMOPQY	Electronic Coils, Transformers, and other Inductors
3679	HLMOPQ	Electronic Components, NEC*
3691	HPQW	Storage Batteries
3692	HPO	Primary Batteries, Dry and Wet
3711	GHJKLMOPT	Motor Vehicles and Passenger Car Bodies
3714	HLMOPQY	Motor Vehicle Parts and Accessories
3716	HLMOPQ	Motor Homes
3721	HLMOPQ	Aircraft
3724	HLMOPQY	Aircraft Engines and Engine Parts
3728	HLMOPQY	Aircraft Parts and Auxiliary Equipment, NEC*
3731	HLMOPQY	Ship Building and Repairing
3732	HLMOPQY	Boat Building and Repairing
3811	HLMOPQ	Engineering, Scientific, Laboratory and Research Instruments
3822	HLMOPQ	Automatic Controls for Regulating, Residential and Commercial Environments and Appliances
3823	HLMOPQ	Industrial Instruments for Measuring, Display, and Control of Process Variables, and Related Products
3824	HLMOPQ	Totalizing Fluid Meters and Counting Devices
3825	HLMOPQ	Instruments for Measuring and Testing of Electricity and Electric Signals
3829	HLMOPQ	Measuring and Controlling Devices, NEC*
3832	HIMOPQ	Optical Instruments and Lenses
3841	HLMOPQ	Surgical and Medical Instruments and Apparatus
3842	HLMOPQ	Orthopedic, Prosthetic, and Surgical Appliances and Supplies
3843	HLMOPQ	Dental Equipment and Supplies
3851	HLMOPQ	Ophthalmic Goods
3861	HLMOPQ	Photographic Equipment and Supplies
3873	HLMOPQ	Watches, Clocks, etc.
3911	HLMOPQT	Jewelry Precious Metal
3914	HLMOPQT	Silverware, Plate Ware, and Stainless Steel Ware

* NEC = Not elsewhere classified

SIC Code	Waste Types	Description
3915	HJLMOPQ	Jeweler's Findings and Materials, and Lapidary Work
3961	HJKLMOPQ	Costume Jewelry and Costume Novelties, except Precious Metal
3964	HJKLMOPQ	Needles, Pins, Hooks and Eyes, and Similar Notions
3993	HIJLMOPQ	Signs and Advertising Displays
3995	HJKLMOPQ	Burial Caskets
3999	HJKLMOPQTY	Manufacturing Industries

4011-4959: Transportation and Public Utilities

4011	JKLTY	Railroads, Line-Haul Operating
4111	LPWY	Local and Suburban Transit
4013	JKLTY	Switching and Terminal Establishments
4119	LPWY	Local Passenger Transportation, NEC*
4121	LPWY	Taxicabs
4131	LPWY	Inter-city and Rural Highway Passenger Transportation
4151	LPWY	School Buses
4172	Y	Maintenance and Service Facilities for Motor Vehicle Passenger Transportation
4212	JKLPWY	Local Trucking, without Storage
4213	JKLPWY	Trucking, except Local
4214	JKLPWY	Local Trucking, with Storage
4231	JKPTY	Trucking Terminal Facilities
4311	JKLPWY	U.S. Postal Service (vehicle maintenance only)
4411	Y	Deep Sea Foreign Transportation
4463		Marine Cargo Handling
4469	JKLTWY	Water Transportation Services, NEC*
4511	LTY	Air Transportation, Certificated Carriers
4582	LTY	Airports and Flying Fields
4583	LTY	Airport Terminal Services
4612	JKLPTY	Crude Petroleum Lines
4613	JKLPTY	Refined Petroleum Pipe Lines
4619	JKLPT	Pipe Lines, NEC*
4811	LT	Telephone communication (Wire or Radio)
4832	LT	Radio Broadcasting
4833	LT	Television Broadcasting
4911	GHJKLMPTY	Electric Services
4931	GHJKLMPTY	Electrical and other Services
4932	Y	Gas and other Service

* NEC = Not elsewhere classified

SIC Code	Waste Types	Description
4939	Y	Combination Utilities, NEC*
4953	H	Sewerage Systems
4953	Y	Refuse Systems
4959	ABCY	Sanitary Services, NEC*
<u>5093-5198: Wholesale Trade</u>		
5093	Y	Scrap and Waste Materials, Wholesale
5161	LPTY	Chemicals and Allied Products, Wholesale
5191	A	Farm Supplies
5198	JKLT	Paints, Varnishes, and Supplies
<u>5231-5984: Retail Trade</u>		
5231	JKLT	Paint, Glass, and Wallpaper Stores
5251	AJKT	Hardware Stores
5271	JKLP	Mobile Home Dealers
5311	AIJKT	Department Stores
5399	AIJKT	Miscellaneous General Merchandise Stores
5511	LPWY	Motor Vehicle Dealers (new and used)
5521	LPWY	Motor Vehicle Dealers (used only)
5531	LPW	Auto and Home Supply Stores
5541	LPWY	Gasoline Service Stations, Retail
5551	LPWY	Boat Dealers
5571	LPWY	Motorcycle Dealers
5599	LPWY	Automotive Dealers, NEC*
5722		Household Appliance Stores, Retail
5962	LT	Automatic Merchandising Machine Operators
5982	Y	Fuel and Ice Dealers
5983	Y	Fuel Oil Dealers
5984	Y	Liquefied Petroleum Gas Dealers
<u>7215-8081: Services Industries</u>		
7215	LM	Coin Operated Laundries and Dry Cleaning
7216	LM	Dry Cleaning Plants, except Rug Cleaning
7217	LM	Carpet and Upholstery
7218	LM	Industrial Launderers
7261	LT	Funeral Services and Crematories
7312	IJKLT	Outdoor Advertising Services

* NEC = Not elsewhere classified

SIC Code	Waste Types	Description
7319	IJK	Advertising, NEC*
7331	IJK	Direct Mail Advertising Services
7332	LOT	Blueprint and Photocopying Services
7333	LOT	Commercial Photography Art, and Graphics
7342	ACH	Disinfecting and Extermination Services
7349	PRT	Cleaning and Maintenance Services to Dwellings and Other Buildings, NEC*
7391	LPT	Research and Development Laboratories
7395	OPQRST	Photofinishing Laboratories
7397	LPT	Commercial Testing Laboratories
7399	LM	Fire Extinguisher Charging Services
7512	LPWY	Passenger Car Rental and Leasing, without Drivers
7513	LPWY	Truck Rental and Leasing, without Drivers
7519	LPW	Utility Trailer and Recreational Vehicle Rental
7531	LPW	Top and Body Repair Shops, Automotive
7534	LPW	Tire Retreading and Repair Shops, Automotive
7535	LPW	Paint Shops, Automotive
7538	LPWY	General Automotive Repair Shops
7539	LPWY	Automotive Repair Shops, NEC*
7622	LPT	Radio and Television Repair Shops
7623	LPT	Refrigeration and Air Conditioning Services, and Repair Shops
7629	LPT	Electrical and Electronic Repair Shops, NEC*
7631	LT	Watch, Clock, and Jewelry Repair
7641	JKLT	Reupholstery and Furniture Repair
7692	LPW	Welding Repair
7694	LT	Armature Rewinding Shops
7699	LT	Repair Shops and Related Services, NEC* (including Taxidermists)
7819	LOT	Services Allied to Motion Picture Production
7922	JKLT	Theatrical Producers (except Motion pictures) and Miscellaneous Theatrical Services
7992	ABC	Public Golf Courses
7993	LPT	Coin-Operated Amusement Devices
7996	JKLPT	Amusement Parks
7999	AJK	Amusement and Recreation Services, NEC*
8062	LPT	General Medical and Surgical Hospitals
8069	LPT	Specialty Hospitals, except Psychiatric
8071	LPT	Medical Laboratories
8072	LPT	Dental Laboratories

* NEC = Not elsewhere classified

SIC Code	Waste Types	Description
8081	LPT	Outpatient Care Facilities
<u>8211-8331: Educational Services</u>		
8211	JKLPT	Elementary and Secondary Schools
8221	JKLPT	Colleges, Universities, Professional Schools, and Junior Colleges
8249	JKLPTY	Vocational Schools, except Vocational High Schools, NEC*
8299	JKLPT	Schools and Educational Services, NEC*
8331	JKLT	Job Training and Vocational Rehabilitation Services
8411	JKLPT	Museums and Art Galleries
8421	ABC	Arboreta, Botanical and Zoological Gardens
8922	LPT	Noncommercial Educational, Scientific, and Research organizations
8999	JK	Services, NEC*

Note: Each industry listed in the above table has been identified as a potential generator of hazardous waste on the basis that the industry may generate corrosive, reactive, ignitable, and/or toxic wastes. For example, SIC code 0711 - Soil Preparation Services, is a potential generator of toxic pesticide wastes.

* NEC = Not elsewhere classified

ATTACHMENT 2

Waiver of Jurisdictional Flow Limits for Domestic/Commercial Wastewater

[Date]

[Name]

[Facility]

[Address]

[City, State Zip]

Re: [Facility] - Waiver of Jurisdictional Flow Limits – Onsite Sewage Treatment and Disposal System

Dear [Name]:

The [District] District of the Department of Environmental Protection (DEP) has completed its evaluation of the proposed onsite sewage treatment and disposal system (OSTDS). Although the projected average daily flow from this establishment is in excess of 10,000 gallons per day [or 5000 gallons per day commercial, whichever is appropriate], this Department believes that an OSTDS permitted by the Department of Health (DOH) may be more appropriate for this establishment. To obtain an OSTDS permit, you will be required to file for a variance with the DOH.

Accordingly, DEP is willing to waive its permitting requirement for the project as presented should the DOH grant a variance. The DOH County Health Department (CHD) in your county can advise you of the procedure in applying for a variance to DOH Rule 64E-6, Florida Administrative Code, and Chapter 381, Florida Statutes. If a variance is ultimately denied by DOH, this Department shall retain jurisdiction.

This letter of no objection is specific to the proposed project. The continued use of the OSTDS is contingent upon satisfactory system performance. When an approved sewage collection system becomes available, the owner of this system may be required to apply for connection. Also, should the OSTDS prove to be inadequate to achieve acceptable treatment and disposal, or should regulations change, this facility may be required to obtain a permit for a wastewater facility from the DEP. If this letter is used to obtain an OSTDS permit from DOH, it will be incorporated into the permit record.

This waiver of jurisdiction in no way restricts DEP from carrying out its lawful activities in protecting the ground and surface waters of the State. In the event the actual flow exceeds the

projected flow or further development on the site occurs, the applicant shall notify both the DOH and this Department.

If you have any questions concerning this matter, please contact me at [Phone Number].

Sincerely,

[Name]

[Title]

cc: [County] County Health Department

ATTACHMENT 3

Waiver of DEP Jurisdiction over Industrial Wastewater

[Date]

[Name]

[Address]

[City, State Zip]

Re: [Establishment]

Waiver of Department of Environmental Protection Jurisdiction

Over Industrial Wastewater for an Onsite Sewage Treatment and Disposal System

Dear [Name]:

This is in response to your [Date], letter requesting a waiver of jurisdiction from the Department of Environmental Protection (DEP) for the use of an onsite sewage treatment and disposal system (OSTDS) regulated by the Department of Health (DOH) for the [proposed/existing] establishment located at [Location].

We have reviewed your submittal of the application documents (Drawing #_____) and our decision to waive DEP jurisdiction is based on the following. [Description of facility/permittee's particular situation and basis for decision.]

Please be advised that DEP has no objection to DOH issuing a permit for an OSTDS for the type of industrial wastewater proposed. In order to obtain an OSTDS permit you must apply for an OSTDS permit through the DOH County Health Department (CHD). You will then be able to file for a variance with the DOH after your permit application is initially denied. The CHD can advise you of the procedure in applying for a variance to DOH Rule 64E-6, Florida Administrative Code, and Section 381.0065, Florida Statutes. This waiver of jurisdiction letter must be submitted as part of the variance application. If a variance is ultimately denied by DOH, this Department shall retain jurisdiction.

This waiver of jurisdiction letter is specific for the purpose requested and is not transferable for any other use or any other owner or tenant without prior approval from this Department. The continued use of the OSTDS is contingent upon satisfactory system performance. When an approved sewage collection system becomes available, the owner of this system may be required to apply for connection. Also, should the OSTDS prove to be inadequate to achieve acceptable treatment and disposal, or should regulations change, this facility may be required to obtain a permit for a wastewater facility from the DEP.

If this letter is used to obtain an OSTDS permit from DOH, it will be incorporated into the permit record. The use of this letter to obtain a DOH permit constrains the property owner, subsequent owners and leaseholders of the installation to agree to routine inspections of that facility and its source of wastes during reasonable business hours by this agency and/or the CHD.

Many commonly encountered materials may not be disposed of in an OSTDS because they are not biodegradable by the system, will contaminate groundwater, or impair the function of the system. Some examples of inappropriate materials are: solvents, thinners, fuels, lubricants, hydraulic oil, vehicle radiator fluid, pesticides, herbicides, inks, mineral acids, lye, photographic wastes, and chemical lab wastes. Disposal of all wastes shall be in accordance with appropriate regulations. This Department has the duty and reserves the right to take enforcement action for violations of groundwater quality. Such enforcement action may, in part, require the owner at his or her own expense to install and operate a ground water monitoring system, prepare a contamination assessment plan, and provide remedial action to remove and dispose of environmentally offensive and health-threatening materials from the affected soil and water. Additionally, the Department may seek court-imposed penalties of up to \$10,000 per day for each day of water quality violation.

If you have any questions concerning this matter, please contact me at [Phone Number].

Sincerely,

[Name]

[Title]

cc: [County] County Health Department

ATTACHMENT 4

No Objection Letter For An Establishment In An Area Zoned Or Used For Industrial Or Manufacturing Purposes

[Date]

[Name]

[Address]

[City, State Zip]

Re: [Establishment, DOH Application #]
No Objection Letter – Onsite Sewage Treatment and Disposal System
Business In An Industrial Or Manufacturing Area

Dear [Name]:

The [County] County Health Department had determined that the [proposed/existing] establishment located at [Location] may generate toxic, hazardous or industrial wastes. It is the Department of Environmental Protection's (DEP's) understanding that an onsite sewage treatment and disposal system (OSTDS) is being proposed for the treatment and disposal of only the domestic wastewater from this facility.

This department has reviewed the documentation submitted [date]. Based on our review of the information provided there are no known sources of toxic, hazardous or industrial wastewater to the septic system. Please be advised that the DEP has no objection to the Department of Health (DOH) permitting the aforementioned establishment, only for **domestic wastewater** treatment and disposal by an OSTDS. This disposal shall be in accordance with all appropriate regulations. Septic tank and drainfield size and construction shall be in accordance with appropriate DOH requirements found in Chapters 381, of the Florida Statutes, and 64E-6, of the Florida Administrative Code

Many commonly encountered materials may not be disposed of in an OSTDS because they are not biodegradable by the system, will contaminate groundwater, or impair the function of the system. Some examples of inappropriate materials are: solvents, thinners, fuels, lubricants, hydraulic oil, vehicle radiator fluid, pesticides, herbicides, inks, mineral acids, lye, photographic wastes, and chemical lab wastes. Per Rule 381.0065, of the Florida Statutes, no industrial wastewater, hazardous or toxic materials or infectious wastes shall be disposed in this system. There shall be no floor drains or mop sinks in the industrial or manufacturing area of the facility.

This letter of no objection for use of an OSTDS construction permit is specific for the proposed project and is not transferable for any other use or any other owner or tenant without prior approval from this Department. If this letter is used to obtain an OSTDS permit from DOH, it

will be incorporated into the permit record. The use of this letter to obtain a DOH permit constrains the property owner, subsequent owners and leaseholders of the installation to agree to routine inspections of that facility and its source of wastes during reasonable business hours by this agency and/or the CHD.

If you have any questions concerning this matter, please contact me at [Phone Number].

Sincerely,

[Name]

[Title]

cc: [County] County Health Department
DEP [District] District Hazardous Waste Program Manager

ATTACHMENT 5

Technical Guidelines For Marina Pumpout Facilities

Technical Guidelines

The Fish and Wildlife Service will administer the Clean Vessel Act grant program through State agencies only. Both public and private marinas are eligible to participate in this program and should conform to these technical guidelines. Other marinas would not have to conform. These technical guidelines should be followed when doing surveys, developing a plan and education program, and constructing pumpout stations and waste reception facilities. Technical guidelines are presented here by Section. At the end of these Guidelines, an information packet is presented, which contains a general discussion of each section, and defines terms in more detail.

Section 1. Waters most likely to be affected by the discharge of sewage from vessels

Guidelines for States to use in identifying waters most likely to be affected by the discharge of sewage from vessels are those waters frequented by large numbers of boaters and include: 1) Sheltered waters that are generally poorly flushed systems; 2) Waters identified to be of National Significance; 3) Waters of significant recreational value; 4) Waters supporting designated shellfish harvest areas; 5) Nursery areas of indigenous aquatic life; 6) Waters designated by the EPA as “No Discharge Areas” under §312(f)(3) and (4)(A) & (B) of the Clean Water Act, and, 7) Waters that do not meet State designated usage.

Section 2. Surveys of pumpout stations and waste reception facilities

Only coastal States are required to do a survey. States should submit surveys to the Fish and Wildlife Service, same address as above.

Pumpout/waste reception facility survey: The survey should include the following for each facility: 1) Name and address of marina, moorage, dock, etc., telephone number and location of marina, etc., by county, water body and specific coordinates. Coordinates, i.e., latitude and longitude, should be reported in North American Datum 1983 (NAD 83) standard. Other alternatives include a) State Plane Coordinate Values, and b) A portion of a NOAA nautical chart identified by chart number, edition, and edition date that marks clearly the pumpout station/waste reception facility; 2) Whether the marina has pumpout stations, waste reception facilities, or both; how many; and, whether they are operational.

Boat survey: The survey should include the following: 1) Total number of boats by water body and county; 2) How many boats have Type III MSD holding tanks; 3) How many boats have portable toilets.

A complete survey of all boaters is not necessary. States should obtain only as much information as is necessary to determine, within reasonable confidence limits, numbers of boats, how many

boats have type III MSD holding tanks or portable toilets, and where boaters are most likely to congregate by water body and county. Sample surveys are acceptable. Recent surveys are acceptable if they answer all of the questions needed.

Section 3. What constitutes adequate and reasonably available pumpout stations and waste reception facilities in boating areas?

As a general guide, at least one pumpout station and waste reception facility should be provided for every 300 to 600 boats (not considering length or toilets). It is recommended that every marina accommodating over 50 boats with toilets should have access to a pumpout station and access to a waste reception facility. Where marinas are adjacent (within two miles of each other), pumpout stations can be shared. However, such factors as boat size, boating use patterns, coastal water characteristics, sensitive areas, flushing capacity, etc., should play a large role in establishing needs for facilities. Due to the variability in each State, States must have the flexibility to provide criteria that addresses their specific needs. See the discussion below on this section for alternate approaches to determining need.

Waste reception facilities should be sited in conjunction with pumpout stations, but should also be located where boats with portable toilets congregate, or are used, such as launching ramps.

Section 4. Plans for Constructing Pumpout Stations and Waste Reception Facilities

Only coastal states are required to develop a plan. States should work with the recreational marina industry and others in developing the plan. States should submit the plan to the Fish and Wildlife Service, same address as above. Following is an outline which should be used by States when developing the plan:

(1) Need. This section should establish the justification for the pumpout work based on (a) the results of the surveys of existing pumpout stations and waste reception facilities and the number of recreational vessels; (b) that part of the guidance related to determining the adequacy and reasonable availability of pumpout stations and waste reception facilities and, (c) that part of the Guidance describing the waters most likely to be affected by the discharge of sewage from vessels.

(2) Goals and Objectives. The purpose of the plan should be to ensure the availability of adequate and reasonably available pumpout stations and waste reception facilities to the boating public throughout the coastal zone of a State.

(3) Expected Results or Benefits. This section should describe in general how water will be improved by making pumpouts and waste reception facilities available

(4) Approach. In this section, describe the following: (a) How the plan addresses all coastal zone waters of the State, and gives priority to waters most likely affected; (b) How the plan complements plans of adjacent States for shared waters; (c) The strategy for locating and constructing, renovating and maintaining pumpouts and waste reception facilities. Include the

general location and priority of projects; (d) How States will ensure that (i) waste will be disposed of properly, and (ii) that municipal waste treatment plants will accept waste; (e) The public/private partnerships that may be developed for siting, constructing and operating pumpout stations and waste reception facilities, and any issues/problems, such as legislative/regulatory barriers; (f) Innovative techniques to increase the availability and use of pumpout stations/waste reception facilities; (g) Approaches to educate and inform the public and the boating industry on the use of, and need for, disposal of vessel waste; and, (h) Total estimated cost of the Statewide plan.

Section 5. Education/Information

Guidelines for States to consider when developing an education/information plan include:

Audience: Consider six audiences when developing your education\information program regarding vessel sewage disposal, handling, and treatment, as follows: 1) Boat owners and operators; 2) Marina owners and operators; 3) Sewage treatment plant owners and operators; 4) Federal (where applicable), State, and local governmental authorities and organizations; 5) boating supply and retailers; 6) The general public.

Communication media: There are a variety of media that States may use for disseminating this information. Common methods to consider are; brochures, workshops/symposiums, educational videos, TV/radio, signs, boat shows, etc. Innovative methods are encouraged.

Distribution: States have options for distribution of educational information related to boating and pumpout issues. Options include magazines, radio public interest spots, environmental groups, association and federation newsletters, National Estuary Program forums, State and local education programs, local citizens groups, and student groups. New and innovative ways of educating the boating community and the general public are encouraged.

Section 6. Appropriate methods for disposal of vessel sewage from pumpout stations and waste reception facilities

Disposal methods will vary among States depending on a number of factors, including: State and local sanitation codes; the number of recreational vessels and where the vessels are concentrated; the availability and geographic proximity of existing treatment facilities to boating centers; and hydrogeologic characteristics, including soil types and groundwater flows towards drinking water sources and these coastal waters. Depending on these factors, States may consider the following methods: 1) Off-site treatment: a) discharge to a public wastewater collection system and treatment facility; b) discharge to a holding tank with removal and transport by a licensed septage hauler to a municipal septage receiving/treatment facility; 2) On-site treatment at marinas; a) discharge to a package treatment plant; b) discharge to a septic system.

Section 7. Types of marine boat sewage pumpout stations and waste reception facilities that may be appropriate for construction, renovation, operation, or maintenance, and appropriate location of the stations and facilities within a marina or boatyard

Pumpout stations and waste reception facilities should provide an efficient means of removing sewage from boats and a means of disposing of that sewage in a safe and sanitary manner. These facilities should include all the equipment, structures, and disposal facilities necessary to ultimately discharge or dispose of boat sewage in an efficient, safe, and sanitary manner without causing an actual or potential public health hazard. Pumpout stations should include equipment for rinsing boat holding tanks. Pumpout stations and waste reception facilities should be adequate to meet the peak use demand for such services. Facilities should be operated and maintained to provide adequate service, and to be maintained to function as intended.

Pumpout stations and waste reception facilities should be reliable, corrosion resistant, easy to use, neat and tidy to clean and use, conveniently located, with low maintenance. Pumps should be specifically designed for handling sewage. Land-based restrooms are not an acceptable option for emptying portable toilets.

All pumps should be safe, functional and efficient. Pumps should be able to pump against the maximum head developed by elevation change and line losses. In addition, the suction connection to the boat should be a tight fit and adjustable by adapters to service boat discharge connections. Pumps should be able to transport flows out of the holding tank. Pumps exceeding 45 gallons per minute may cause tanks to collapse.

Factors in determining pumpout station holding tank capacity include boat size and use patterns. Sizing should be done on a case-by-case basis using documented demand, if possible. Holding tanks should be designed and installed to meet local regulations.

For all vessels manufactured after December 31, 1994, a standard deck fitting for removal of sewage should be constructed to the “International standard ISO 4567 Shipbuilding - Yachts - Waste water fittings” for holding tanks, which is a female 38.1 mm (1 1/2”) pipe size with 11 threads per 25.4 mm (inch). These threads could utilize a quick-disconnect or cam lock fitting. For existing vessels, an adapter, such as a tapered cone, should be used for non-standard deck fittings. All pumpout connectors should fit the standard deck fitting.

For all vessels manufactured after December 31, 1994, because of possible confusion between waste, fuel and water deck fittings, the deck fittings should be identified with the words “WASTE”, “GAS”, “DIESEL”, and “WATER”, and color code the fittings with black caps for waste, red caps for gas AND diesel, and blue caps for water.

The ultimate location for the station should be based on the unique conditions of the marina, boatyard, mooring field or other anchorage. Stationary pumpout stations should be located for the convenience of, and to encourage boaters to use the facility. Mobile pumpout stations should have reasonable access to boaters.

Section 8. Other information (No technical guidelines)

Date

Director, Fish & Wildlife Service

Information Packet

This information packet is not technical guidelines. It has been recommended to provide additional information to States, and to marinas and others who may participate in this program. The information packet presents general information on surveys, plans, education/information, pumpout facilities and other information helpful in promoting establishment of facilities. It provides a more detailed discussion of the technical Guidelines, with examples and explanations. This information packet is also by section, which corresponds to the sections in the technical Guidelines.

Section 1. Waters most likely to be affected by the discharge of sewage from vessels

The following coastal waters, including the Territorial Seas, estuaries, bays, and sounds, and then U.S. lakes and rivers as defined below, are considered waters most likely to be affected by the discharge of sewage from vessels. These definitions are not ranked in priority order.

- 1) Sheltered waters that are generally poorly flushed systems.
- 2) Waters of National significance: waters identified by the Environmental Protection Agency under the National Estuary Program, waters identified by the National Oceanic and Atmospheric Administration under the Estuarine Reserve program, and Marine Sanctuaries programs where appropriate.
- 3) Waters of significant recreational value: A water body with unusual value as a resource for outdoor recreation activities, e.g., fishing, boating, canoeing, water skiing, swimming, scuba diving, or nature observation. The significance may be in the intensity of present usage, in an unusual quality of recreational experience, or in the potential for unusual future recreational use or experience.
- 4) Shellfish harvest waters: Waters designated as shellfish producing and harvesting areas.
- 5) Nursery areas of indigenous aquatic life: Significant aquatic plant beds, wetlands, or any area used by the early-life stages of aquatic life during the period of rapid growth and development into the juvenile states.
- 6) Waters designated by the EPA as “No Discharge Areas” under § 312 (f)(3) and (4)(A) & (8) of the Clean Water Act.

7) Waters that do not meet State designated usage.

Discussion of the effects of vessel sewage on these waters

Waters previously designated by the EPA under the Clean Water Act as “No Discharge Areas” are eligible for renovation, maintenance and further construction funds under this program. The discharge of sewage from boats may degrade water quality by (1) introducing microbial pathogens into the environment and (2) locally increasing biological oxygen demand (U.S. EPA, 1985). While vessel sewage discharges represent only one of several sources of point and non-point pollution, the number of boats using coastal waters has increased substantially during the past decade. The contribution of boat sewage to total pathogen loadings and local biological oxygen demand has grown proportionately.

A potentially serious problem resulting from vessel sewage discharges is the introduction of disease-carrying microorganisms from fecal matter into the coastal aquatic environment. Humans are put at risk by eating contaminated shellfish and by swimming in contaminated waters. The major disease-carrying agents are bacteria and viruses, and the most common serious ailment is acute gastroenteritis. Other waterborne diseases include hepatitis, typhoid, and cholera (Milliken and Lee, 1990). The indicators used to detect sewage pollution are not the pathogens themselves, but, rather, coliform bacteria. These bacteria are always present in the human intestinal tract and are thus considered reliable indicators of the presence of human waste (U.S. EPA, 1985). Studies conducted in Puget Sound, Long Island Sound, Narragansett Bay, and Chesapeake Bay have demonstrated that boats can be a significant source of fecal coliform bacteria in coastal waters, particularly in areas with high boat densities and low hydrologic flushing (Milliken and Lee, 1990; JRB Associates, 1980). If coliform levels exceed allowable thresholds, shellfish beds and swimming beaches may be closed to minimize the threat of public health problems. In addition, shellfish beds and swimming beaches in the immediate vicinity of marinas are often closed because of the potential of contamination from vessel sewage discharges.

These organic-rich wastes also have the potential to depress oxygen levels as they decay in the marine environment. Biological oxygen demand (BOD) is a measure of the dissolved oxygen required to decompose the organic matter in the water by aerobic processes. When the loading of organic matter increases, the BOD increases, and there is a consequent reduction in the dissolved oxygen available for respiration by aquatic organisms (U.S. EPA, 1985). Although the volume of wastewater discharged from boats is relatively small, the organics in the wastewater are concentrated, and therefore the BOD (1700-3500 mg/l) is much higher than that of raw municipal sewage (110-400 mg/l) or treated municipal sewage (5-100 mg/l) (JRB Associates, 1981). Sewage discharged from holding tanks will thus increase the BOD in the vicinity of boats. When this occurs in poorly flushed waterbodies, the dissolved oxygen concentrations of the water may decrease (Milliken and Lee, 1990).

Additional problems associated with boat sewage arise from the use of chemical additives such as chlorine, formaldehyde and zinc compounds to disinfect or control odors on-board sewage. Of

the two major disinfectant chemicals used - chlorine and formaldehyde - only chlorine has been shown to be toxic in the aquatic environment. While formaldehyde is considered a toxic substance, it is completely miscible in water and is readily degradable. Zinc salts are frequently used as bacteriostatic accents in holding tanks. Zinc has been reported to be lethal to fish and many aquatic plants, and is known to bioaccumulate. While a direct link between MSD holding tank disinfectants and effects on the environment has not been documented, the presence of these chemicals in sufficient concentrations may be of concern (JRB Associates, 1981). In addition, since the amounts of chemicals added are controlled by the boat owner or operator, excess use may occur.

Section 2. Surveys of pumpout stations and waste reception facilities

The Clean Vessel Act of 1992 calls for surveys by coastal States within three months of notification to the States of the final technical Guidelines to determine: (1) the number and location of all operational pumpout stations and waste reception facilities at public and private marinas, mooring areas, docks, and other boating facilities within the coastal zone of a State; and (2) the number of recreational vessels in the coastal waters of the State with Type III marine sanitation devices (holding tanks) or portable toilets and the areas where those vessels congregate.

Survey information may be obtainable from the boat registration process or files; contacts with trade associations or boating organizations; from national surveys if available; or from mail or telephone surveys of boaters or marina/mooring field facility operators. Some States have surveyed boaters at marinas on high concentration days. The U.S. Coast Guard, telephone 202/267-1497, can provide the following information regarding Documented Vessels (5 net tons and larger): the vessel's port of documentation, vessel length, beam, net tonnage, and whether or not the vessel is equipped with mechanical propulsion.

Section 3. What constitutes adequate and reasonably available pumpout stations and waste reception facilities in boating areas

Factors affecting pumpout use: Potential demand for pumpouts and/or waste reception facilities is a function of several variables. First is the number of boats of a size that use sewage holding tanks or portable toilets and where they are stored. Second, accessibility of pumpouts and waste reception facilities affects their use. Distance from routes of travel or from the home port as well as the likely waiting time once at the facility can affect the willingness of boaters to use pumpouts and waste reception facilities. A third factor to consider is boat use. High use at moorages is related to transient versus "parking lot" customers, year-round versus seasonal users, and the frequency of overnight use of boats. High boat use is seasonal, correlated with good weather, weekends and holidays. Fourth is the fee charged, with higher use related to lower fees.

High use of pumpouts and waste reception facilities has also been related to aggressive management practices, active enforcement of "No Discharge Areas", perception of need by the public (related to the environmental sensitivity of the area and educational efforts), and good maintenance.

Determining adequate and reasonably available station/facility needs: Boat numbers, boat size, boating use patterns, numbers and distribution of existing facilities, and where boats are kept during boating season (i.e., in a marina, yacht club, private dock, mooring, home on a trailer, etc.), determine the need for pumpout stations and waste reception facilities. Moorages that receive high transient use, have mooring fields for large boats, are visited by large numbers of boats for refueling, and/or have a large number of people sleeping overnight or living in their boats should have high priority. Yacht clubs, boatyards and large capacity private docks should also be considered for priority installation of pumpouts and waste reception facilities. Other situations that might be considered for the installation of facilities include marinas that provide fuel or service vessels equipped with MSD holding tanks. In addition to distributing stations/facilities in the above types of boating moorages, additional stations/facilities may be warranted where boat use impacts poorly flushed bays, coves, or sloughs and environmentally sensitive sites. After new facilities have been installed, subsequent patterns of use will indicate where and if additional pumpouts are needed. Periodic surveys should be conducted to ensure adequate numbers of pumpout stations and waste reception facilities exist for boaters in the future.

Requirements for pumpout and waste reception facilities vary by State and harbor. Some examples are as follows: Delaware requires a pumpout for marinas harboring 100 or more boats with marinas of 25-100 sharing a pumpout and those with less than 25 not required to install facilities. For New England, EPA Region I guidelines suggest a pumpout for 300-600 boats with toilets. A minimum of one pumpout per 300 boats with toilets is recommended in transient harbors with a high percentage of large vessels, while one pumpout per 600 boats with toilets should be provided in “parking lot” harbors where most boats are less than 25 feet long. In California’s Richardson Bay, the pumpout guideline is one station for every 300 boats. Some States require installation of pumpouts for all new marinas or the expansion of existing marinas. Launching ramps, marinas, etc., that cater to small craft (under 26 feet) or are too shallow for larger vessels may not need pumpouts, but may still require waste reception facilities to receive portable toilet waste.

EPA’s assessment (EPA, 1981) estimated that 20% of the boats between 16 and 26 feet, 50% of the boats between 26 and 40 feet, and all of the vessels over 40 feet had installed toilets with some type of marine sanitation device. So, if exact data are not available, an estimate could be calculated. The following is a method for estimating State-wide need for pumpout stations and waste reception facilities (McKiernan, pers. comm.). It is not intended as a guide for determining requirements for a specific marina or harbor. The following assumptions underlie this method and can be adjusted where statistically valid information is available relating to a State’s unique boating population characteristics.

1. Given the availability of boat length information gathered during boat registration, assumptions can be made regarding the type of on-board sanitation equipment.

<u>BOAT LENGTH</u>	<u>NUMBER WITH TOILETS</u>	<u>TYPE OF SYSTEM</u>
16' - 26'	20%	Portable toilets
26' - 40'	50%	Holding tanks
40' +	100%	Holding tanks

- It is assumed every boat which is occupied will require service once a weekend and that the occupancy rate during peak periods is 45%.
- This method also assumes facilities will be in operation for twelve hours per day during weekends and that the average time to service a boat's system will be 15 minutes for holding tanks and 5 minutes for portable toilets. Therefore:

CALCULATION FOR ESTIMATING NEED FOR WASTE RECEPTION FACILITIES:

No. of Boats 16'-26'	x	No. With Portable Toilets (20%)	x	Peak Occupancy Rate (45%)	=	BOATS REQUIRING WASTE RECEPTION FACILITIES	=	WASTE RECEPTION FACILITIES REQUIRED
Boats Served Per Hour (12)	x	No. of Hours Of Operation Per Weekend (24)	=	BOATS SERVED PER FACILITY (288)				

CALCULATION FOR ESTIMATING NEED FOR PUMPOUT STATIONS:

No. of Boats 26'-40'	x	No. With Holding Tanks (50%)	+	No. of Boats 40' +	x	Peak Occupancy Rate (45-M)	=	BOATS REQUIRING PUMPOUT FACILITIES	=	PUMPOUT STATIONS REQUIRED
Boats Served Per Hour (4)				Number of Hours Of Operation Per Weekend (24)		BOATS SERVED PER PUMPOUT (96)				

Section 4. Plans for Constructing Pumpout Stations and Waste Reception Facilities

The Clean Vessel Act calls for coastal States, within six months after notification of the final technical guidelines, to develop a plan for any construction or renovation of pumpout stations and waste reception facilities. For efficiency of review and approval by the Fish and Wildlife Service, coastal States should complete the plan in the standardized format identified in the technical guidelines.

Section 5. Education/Information

A clearly defined education/information program that will support the timely implementation of a State plan should be presented by the State as a part of that plan. This guidance provides States with some ideas and information useful in developing an education/information program effective at informing the public, the boating community, the boating industry, local government officials, public interest groups, and other audiences the State identifies. Ultimately, the State education/information program should provide information and understanding that will encourage the use of and installation of pumpout and waste reception facilities.

Education of the boating, marina owner, and vessel sewage handling and treatment communities is important to the potential success of this program. An effective education/information program will help to realize both short term and long term goals of the Act. The goals of education are as broad as the audiences they should be targeted to reach, yet, these goals can be achieved with increased dialogue between and information to these groups.

Six audiences should be considered when developing your education/information program regarding vessel sewage disposal, handling, and treatment, as follows: (1) Boat owners and operators; (2) Marina owners and operators; (3) Sewage treatment plant owners and operators; (4) Federal (where applicable), State and local governmental authorities and organizations; (5) Boating supply and retailers; (6) The general public.

There are a variety of media that States may have available for disseminating this information. Common methods to consider are; brochures, workshops/symposiums, educational videos, TV/radio, signs, boat shows, etc. Innovative methods are encouraged.

Issues to consider when developing education/information material targeted to a specific audience:

Issues on which education/information programs for boat owners and operators as well as, boating supply and retailers might focus would include: 1) Environmental impacts of boater sewage and the benefits of pumping out at a pumpout station and using a waste reception facility; 2) How a pumpout station operates; 3) Pumpout hose connections/adapters; 4) Pumpout locations and fees; 5) “Green” boat toilet chemicals, i.e., short term biodegradable or less environmentally-damaging treatment chemicals. Encourage manufacturers through demand to

market only environmentally responsible products; 6) Proper operation and maintenance of boat toilets; 7) The value of responding to boater surveys and requests for information.

Marina owners and operators are important participants in the implementation of this program. This group is making a commitment for the long term by agreeing to install, maintain, and operate pumpout and waste reception facilities. Issues States should consider (where applicable) when developing education/information programs for marina owner and operators include: 1) Benefits to marinas under this program; 2) The application process for receiving funds to construct, renovate, maintain, and operate pumpout and waste reception facilities; 3) What are adequate and reasonably available pumpout facilities; 4) Reasonable fees; 5) Environmental benefits of providing pumpout stations and waste reception facilities; 6) How to obtain a permit for a municipal hookup and options for disposal of pumpout waste; 7) Where to locate pumpout and waste reception facilities; 8) Methods of encouraging boater compliance with pumpout requirements; 9) Types of pumpouts and waste reception facilities currently on the market; 10) Encourage manufacturers to provide demonstrations for and training of marina personnel responsible for operating these devices; 11) Highlighting those marinas who have done an excellent job in installing and maintaining facilities.

Wastewater collected from pumpout facilities must be discharged from the marina to an appropriate treatment facility. Waste treatment plant owners and operators should be made aware of the options available to them for receiving and treating waste from boat holding tanks and portable toilets.

Issues for States to consider when developing education/information programs for wastewater treatment facility owners and operators include:

- 1) Effects of this waste stream on waste treatment plant's normal operations and how to mitigate any negative effects;
- 2) Volume of waste from boats in proportion to normal "house hold" loading standard;
- 3) Experience of waste system operators in areas designated "No Discharge".

The State may find it necessary to develop education/information programs that address issues related to Federal, State and local government agencies. Issues to consider for education/information programs for this audience include: 1) Awareness of environmental requirements and enforcement options for vessel sewage disposal and treatment (particularly for incoming harbor masters); 2) Encouraging the development of technical guidelines for design, installation, and use of pumpout facilities; 3) Encouraging the appropriate Federal agencies to support a national standard on pumpout and boat fittings; 4) Environmental benefits of reducing the amount of waste water discharged from boats in localized areas, i.e. shellfish beds; 5) Encouraging vessel manufacturers to include procedures for proper operation of vessel holding tanks and shoreside pumpout facilities in new owners manuals; 6) The value of enforcement in implementing this program; 7) Value of educating the public; 8) Informing Federal, State and local governments on how to access Federal informational sources, and encouraging them to do so; 9) Working with State and local governments to mandate, after a reasonable period of time, the installation of pumpout facilities at marina, as a condition of marina licensure or operation.

Education of the general public has an important role to play. Issues to consider for education/information of this audience include: 1) The environmental impacts of boater waste; 2) Importance of the coastal resource; 3) Efforts by the boating community to reduce waste discharges.

States have options for distribution of educational information related to boating and pumpout issues. Options include magazines, radio public interest spots, environmental groups, association and federation newsletters, National Estuary Program forums, State and local education programs, local citizens groups, and student groups. New and innovative ways of educating the boating community and the general public are encouraged.

Representatives of the various groups could meet together at the State/local level to determine what information and education materials and strategies are needed to accomplish the objective. Private conservation and education groups could provide suggestions and materials once the needs are defined.

Section 6. Appropriate methods for disposal of vessel sewage from pumpout stations and waste reception facilities.

Introduction: The safe and sanitary disposal of vessel sewage waste must be provided for when constructing and operating pumpout stations and waste reception facilities. Boaters will not want to spend time and money pumping out unless they can be assured that their effort will help improve water quality.

VESSEL SEWAGE CHARACTERIZATION

Vessel sewage is more concentrated than domestic sewage for almost all the standard parameters used to measure the quality of wastewater, including suspended solids, biological oxygen demand (BOD), and total nitrogen. For example, the typical concentration of BOD in vessels is between 1700-3500 mg/l, while typical sanitary wastewater ranges from 110-400 mg/l for raw sewage and 5-100 mg/l for treated sewage. Raw municipal sewage has a lower concentration because people on land use more water for sanitary purposes than do people on boats. In addition, the proportion of gray water (defined as water from baths, showers and kitchens) is greater in municipal sewage, and municipal collection systems are subject to inflow and infiltration of storm water.

Another characteristic of vessel holding tank waste is the presence of chemical additives used to disinfect and deodorize the waste. These same additives are used to treat sanitary wastes in recreational vehicles (RVs), trains, and aircraft. Ideally, the odor-control chemicals should be biodegradable when diluted. These chemical additives commonly contain an active disinfectant along with dyes and perfumes. Some of the more common disinfectants include formaldehyde, paraformaldehyde, quaternary ammonium chloride, and zinc sulfate; formaldehyde is the most popular because of its effectiveness.

There is some concern from operators of small municipal and package sewage treatment plants and some marina operators with septic systems that vessel sewage holding tank waste may adversely affect performance of their sewage treatment systems by destroying the bacterial population, thereby reducing plant efficiency. A second concern, particularly of operators of municipal treatment plants operating at or near capacity, is that the additional volume of waste will cause the plant to exceed its capacity to treat wastewater effectively.

Research into the effects of chemical additives on sewage treatment processes indicates that these problems have been greatly overstated, and that, in general, most municipal sewage treatment plants can handle vessel holding tank waste without difficulty. In addition to relatively low volumes generated by sewage pumpout stations, the weekly and seasonal usage of marina facilities protects treatment systems from failing or exceeding capacity. Marinas receive their largest pumpout volumes on weekends and, in many parts of the country, only during the summer season. Therefore, treatment plants generally are able to assimilate such intermittent waste loading and no serious operational problem occurs.

Despite the negligible effects of holding tank additives on sewage treatment processes, general concern about toxic contaminants in the environment has led to the development of non-toxic, environmentally benign holding tank deodorants and disinfectants. States should encourage the use of these products through education and, if necessary, regulation.

DISPOSAL METHODS

Disposal methods will vary depending on a number of factors, including: State and local sanitation codes; the number of recreational vessels and where the vessels are concentrated; the availability and geographic proximity of existing treatment facilities to boating centers; and hydrogeologic characteristics, including soil types and groundwater flows. Depending on these factors, States may consider the following methods:

- 1) Off-site treatment: a) discharge to a public wastewater collection system and treatment facility; b) discharge to a holding tank with removal and transport by a licensed septage hauler to a municipal septage receiving/treatment facility.
- 2) On-site treatment at marinas: a) discharge to a package treatment plant with subsequent discharge back-into coastal waters (an NPDES permit would be required); b) discharge to a septic system, where no other alternative is available.

The following is a description of the relative merits of each of these methods. It should be noted that each State has its own regulations and policies regarding what it considers “appropriate” disposal methods. What one State considers appropriate or even desirable, another may prohibit.

Off-site Treatment

There are hundreds of existing municipal wastewater treatment facilities serving coastal areas throughout the country. Most provide at least secondary treatment utilizing an activated sludge

process, but they vary greatly in size and details of treatment structures, sludge handling capability and success in meeting current permit terms and conditions. In addition, many also incorporate septage receiving and treatment facilities into the overall treatment system.

Public Wastewater Collection Systems: The best option for the safe and sanitary disposal of vessel sewage is through a direct connection to an approved wastewater treatment facility. Most municipal treatment plants should have no problem accepting vessel holding tank waste. The relatively small volume of holding tank waste, bled into the sanitary waste stream, is effectively diluted by municipal sewage. The relatively large volume of wastewater routinely handled by these plants also mitigates against plant upset, and the treatment process can also break down or volatilize certain of the trace organic chemicals. Sewage treatment plants with a long history of accepting holding tank waste have reported no problems with this practice. However, States should exercise caution in designating sewage treatment plants that are over-capacity, have operational problems, or violate permit conditions on a regular basis.

Shoreside Holding Tanks/Septage Treatment Facilities: Many boating facilities are located where connection to a wastewater collection system is difficult or infeasible. In these cases, connection of the pumpout or waste reception facility to a shoreside holding tank is the next best option. Holding (or tight) tanks provide a means for sanitary storage of vessel sewage until it can be transported by a licensed septage hauler to an approved septic waste receiving/treatment facility. The holding tank may be above or below ground, depending on State or local requirements, but should be located on solid land and secured to minimize potential storm damage or vandalism.

Septage receiving/treatment facilities are designed specifically to pretreat these wastes before introducing them to the wastewater treatment system. Because vessel holding tank and portable toilet waste is similar in nature to domestic septage, although more concentrated with variable amounts of organic chemicals, a properly operating municipal treatment plant with septage receiving/treatment facilities should not be adversely affected by the introduction of holding tank waste.

Modifications to Wastewater/Septage Treatment Facilities: Some wastewater treatment plants and septage receiving/treatment facilities may require modification to accommodate vessel sewage. These modifications may include increased capacity, construction of adequate septage receiving/treatment facilities, holding and bleed-in facilities, pretreatment facilities, and additional analytical capability. To determine which plants have the capability to effectively process holding tank waste, and whether additional facilities (or modifications to existing ones) are required. States may need to conduct a survey of the existing capabilities and limitations of their existing sewage treatment plants. A matrix to determine these capabilities might include the following elements, for which many States have available data as file information: 1) List all sewage treatment plants; 2) Eliminate plants that are over capacity, have operational problems, or violate permit conditions regularly; 3) Evaluate the balance for existing capacity and treatment methodology; 4) Estimate the available capacity; 5) Develop a short list of candidates for vessel sewage treatment; 6) Develop list of potential needs for modifications to those plants, including: a) receiving stations; b) holding/bleed-in tanks, and associated piping; c) pretreatment needs; d) associated sludge handling needs; and, e) additional staff and analytical capabilities.

On-site Treatment

On-site treatment at a marina may be a viable alternative when the marina is not located near sewer lines, when transport of waste is prohibitively expensive, when the local sewage treatment plant is unable to accept additional discharges, and when groundwater and coastal waters can be protected. On-site treatment eliminates the need to transport waste. However, the proliferation of small, potentially troublesome treatment systems often creates more water quality problems than the collection of vessel sewage is intended to solve, including coastal and groundwater contamination.

Package Treatment Plants: Package treatment plants offer an alternative for the treatment of both vessel sewage and waste generated by marina restrooms and other shoreside sanitary facilities. Package treatment plants are usually small, prefabricated sewage treatment plants that provide secondary treatment, generally utilizing the extended air mode of operation. In this process, treatment is accomplished by introducing air into the wastewater to encourage the growth of aerobic bacteria which digest the sewage, providing a high degree of treatment.

Discharging vessel sewage to a package treatment plant should only be considered by boating facilities with large treatment systems that can handle the increased shock loading and chemical additives present in this type of waste. The typical problems with such systems are exacerbated by the nature of holding tank waste. Like septic systems, package plants are designed to deal with sewage with a low solids content, and the treatment process itself is highly dependent on an environment that is not toxic to the treatment bacteria. Holding tank waste is concentrated, which may raise treatment and sludge handling issues. Normal difficulties with treatment variability would be worsened by the slug flow nature of the discharges to a package treatment plant, though they can be eliminated by “bleeding” the influent into the plant. In addition, the waste may contain metals and hydrocarbons which can destroy the treatment process in a small plant.

Based on these concerns, States may not want to encourage the development of a multiplicity of small sewage treatment plants, due to the variability of effluent quality as well as substantial difficulty in ensuring proper operation and maintenance of the mechanical components of such systems.

Septic Systems: Septic systems are the conventional on-site sewage treatment systems throughout the United States. They consist of a septic tank where primary treatment (physical operations) predominate. These operations are floatation, settling, and the digestion of the sludge that accumulates in the bottom of the tank. Effluent from the tank is directed to a subsurface leaching system which provides additional treatment by establishment of a biological crust; its resultant permeability is a direct function of the biological oxygen demand (BOD) and suspended solids in the effluent stream. Once effluent leaves the crust zone it enters a soil environment where, if the septic system has been properly sited, a number of treatment processes will result in a high quality final effluent. The size and location of the leaching system (or drainfield) is extremely

important because the quality of the final treatment is highly dependent on the type and quantity of the soil through which the effluent will pass.

In general, septic systems are not a favorable option for the disposal of vessel sewage, because they are not designed to treat the high solids content, high strength, and possibly toxic content of these wastes. They are not very effective at removing trace organic chemicals, and are ineffective at removing nutrients. The chemical additives used to disinfect and deodorize holding tank waste may kill the bacteria that aerobically digest the sewage, allowing solids to pass through the septic tank and causing the drainfield to clog and overflow. Nutrients leaching from the drainfield may stimulate algal growth in receiving waters, which can reduce the amount of sunlight necessary for sub-merged aquatic vegetation to grow and use up oxygen needed by fish and other aquatic life. In marine waters nitrogen is the nutrient most likely to cause these adverse effects, while phosphorous is the problem in fresh water.

Vessel sewage should be discharged to a septic system only if no other options exist and the system is specifically designed and sited to receive such waste. This design includes: using large tanks to manage and “bleed” in increased flows from pumpout stations; combining flows from ordinary bathroom facilities on-shore and the pumpout stations to dilute pumpout wastes; providing two septic tanks in series to help segregate solids in the first tank and increase retention time in the system; a large single drainfield or use of alternating drainfields, and proper siting to assure the leach field does not drain into the coastal waters or contaminate groundwater. In addition to following specific design criteria, septic systems should be inspected regularly and properly maintained.

Section 7. Types of marine boat sewage pumpout stations and waste reception-facilities that may be appropriate for construction, renovation, operation, or maintenance, and appropriate location of the stations and facilities within a marina or boatyard:

There are four basic types of pumpout stations on the market. Each one has its advantages and disadvantages. Since every marina is unique, there is no one solution that will work in all cases. Therefore, each case should be examined individually, and the pumpout that will work best in any particular situation should be selected. Costs for equipment and installation can vary greatly, depending on need for sewage lift stations to accommodate widely fluctuating tides, need for special onshore holding tanks to hold concentrated waste, cost of connection to a sewer system, and other factors. Stationary or portable dockside pumps cost in the range of \$2,000 to \$10,000, and typical complete installations may be as high as \$20,000. Following is a list of pumpout station types with a discussion of advantages and disadvantages.

1) Stationary pumpout unit: Stationary units include a connector hose and pump, and are connected directly to a local or municipal sewage treatment facility or a holding tank. The unit is usually located at the end of a pier or floating dock, often near the fueling facilities. Vessels access the pumpout station by approaching and securing to the dock or pier. Advantages are convenience and efficiency. Principal disadvantage is that the unit restricts pumpout service to a single area of the marina, which may cause congestion.

- 2) Portable pumpout unit on wheels: This unit may be a wheeled device, consisting of a holding tank, hose and mechanical or hand pump, that is pushed along a dock to the vessel's location to pump out vessel sewage. The advantage is the unit is brought to the boat rather than the boat to the station. When full of sewage, however, the unit can be heavy and cumbersome. Since it must be moved from boat to boat, the time required to complete the pumpout operation can be somewhat greater than that of fixed units. The unit is also limited by its storage capacity.
- 3) Portable pumpout unit on a vessel: This unit is a boat with pumpout station on board, consisting of a pump and holding tank, that may be radio-dispatched or respond to a signal flag, to pump vessel holding tanks. The advantage is the convenience of having the pumpout station come directly to the boat. Range of operation can be a problem.
- 4) Remote operated multi-station system: This system has a pump which transports wastes via a main sewer to central collection and treatment. This unit can provide pumpout capabilities at any number of locations throughout the marina. This system, which provides wastewater collection anytime, combines the convenience and efficiency of fixed units with the versatility offered by portables. This system must be specifically designed to individual project requirements. In northern climates, freezing can be a problem.

There are five basic types of pumps used in pumpout systems. Following is a description of each.

- 1) Centrifugal pump (rotary or impeller types): This pump works when sewage in its impeller is spun to the outside of the impeller by centrifugal force, which creates a low pressure area at the impeller as it pumps. Most centrifugal pumps require priming. This pump is usually employed in lift station situations.
- 2) Reciprocating pump (diaphragm and piston types): This pump, mechanical or hand operated, creates suction by mechanically lifting a diaphragm up and pushing it down in a pump body. The diaphragm works in conjunction with two or four check valves. As the diaphragm lifts, the low pressure area under it causes sewage to be sucked into the body through the inlet check valve; when it is pushed down the pressure under the diaphragm closes the inlet check valve and forces sewage out the outlet check valve. This pump is self-priming.
- 3) Vacuum pump: This pump does not directly contact sewage, but draws air out of a tank which creates the necessary low pressure area or vacuum to cause the sewage to flow in. When the accumulator tank is full, pressurized air enters the accumulator tank and the pressure pushes the sewage out to a sewer or holding tank. This pump allows pumping over longer distances.
- 4) Flexible vein impeller pump: This pump has suction lift. It is easy to repair and needs no priming. A switch device is needed to prevent the pump from running dry and damaging the impeller.

5) Progressive cavity pump: This pump consists of stainless steel rotor or screw surrounded by a tight fitting rubber sleeve. As the rotor turns the sewage is progressively moved to the discharge line. This pump is self-priming.

Equipment failure can occur with any of the above equipment. Most common causes are mechanical failure, followed by clogging of hose and/or pump, loss of hose prime, and hose failure.

In addition to pumpout stations, there are facilities to receive sewage waste from portable toilets. A waste reception facility consists of a receiving receptacle for sewage from portable toilets, and includes associated equipment and storage tank or sewer line connection. This facility is not a land-based or floating restroom, but can be made a part of such. Floating waste reception facilities should be considered at mooring fields and other strategic locations. The device typically includes a receiving basin, which should be a minimum of 12 inches in diameter, and with a lid that completely covers the receiving unit (to control odors and insect access), with provisions for rinsing the portable toilet following emptying of the contents. If the unit is designed to drain, the drain should be a minimum of 3 inches in diameter and equipped with an insect-tight cover. Waste reception facilities should be equipped with a washdown system to allow cleaning of the portable toilet. The washdown system should be clearly marked as unfit for drinking water. Wand attachments may be connected to a pumpout station to empty portable toilets, rather than building a separate facility.

Following is a description of other equipment that is part of the pumpout station.

Pumpout station holding tanks: Holding tanks should be sized appropriately for the volume of sewage generated and the frequency of removal of material from the holding tank. State and local requirements may govern the size of holding tanks. Generally, a 1,500-gallon holding tank can serve up to 100 boats with holding tanks. In terms of the number of boats serviced with a normal removal schedule, the following minimum sizes are suggested:

Total # of Boats Serviced with Holding Tanks	Recommended holding Tank Volume (gallons)
1-20	300
21-40	600
41-60	900
61-80	1200
81-100	1500
100+	2000

Pipes/hoses: Discharge piping should be rigid or noncollapsing flexible, with locking connections. Corrugated or ribbed hoses are not recommended. The line should be watertight and appropriately fastened or secured to the dock or pier. Local building codes should be checked for specific piping requirements, but the following materials are generally accepted for pumpout station service: polyvinyl chloride (pvc), and polyethylene.

Expansion joints should be included where appropriate. Force main systems may require “thrust blocks” and other security fastenings.

Fittings: Deck fitting (sewage removal fitting) is defined as: a flanged fitting permanently mounted on the vessel and connecting to the onboard holding tank. A connector is defined as: a nozzle or coupling permanently attached to the suction hose of a pumpout station. An adapter is defined as a fitting designed to facilitate adapting a pumpout connector to a vessel deck fitting.

When the requirement for vessels with an installed toilet to have a certified marine sanitation device went into effect under 33 CFR 159 on January 30, 1975, there was a requirement for sewage removal fittings or adapters to be 1 1/2” for boats less than 65 feet in length. The expected types of acceptable fittings included threaded, flanged, or quick disconnect fittings. However, 33 CFR 159 was amended on January 3, 1977 to allow holding tanks to be certified by definition if they store sewage and flushwater only at ambient air pressure and temperature. As a result, boats have been put on the market with many sizes of sewage removal connector fittings, requiring the use of adaptors in order to assure a clean, tight connection when a pumpout occurs,

There are several adapters on the market today. A black rubber nozzle is used by most boaters. Another adapter, the fuel hose fitting or cam-activated connector, consists of a male portion which fits into the connector, and a female portion which locks onto the male portion.

A suction nozzle or fitting such as a friction nozzle (right angle preferred) or cam-activated quick connector positive locking attachment should be provided on the end of the suction hose. Adapters should be provided to fit the 1.5-inch discharge connector. A valve should be provided on the suction hose at the nozzle. A valve should be provided on the pump end of the suction line if the line is to be installed in a manner such that sewage would discharge from the line when the pump is removed for service. Positive locking connections on the end of the discharge line should be provided to prevent it from coming loose during discharge. The discharge line should be protected from freezing, and prevented from leaking into the water. Suction hoses should be equipped with a clear tubing or a sight glass on the suction end of the hose to allow the pumpout station operator to determine, when the pumping is complete.

Other factors that should be considered when installing pumpout stations/waste reception facilities include the following.

Convenient location enhances use. Stationary pumpout stations should centrally be located as close to a boat off-loading point as possible and/or where boats need to maneuver the least. The end of a dock is a good location because it is accessible. Many facilities are located at the fuel dock, so boaters only have to go to one location for both of these activities. Water level changes should be considered when installing pumpout stations.

Operation and maintenance: Proper operation and maintenance of pumpout stations and waste reception facilities is critical to provide adequate and reasonable service. An individual should be assigned responsibility for operation and maintenance of pumpout and waste reception

facilities. Consider appropriate protective clothing, such as gloves, and hand washing, to protect the operator. Washing facilities should be readily available.

Convenience for boaters and operators is a major factor. Hours of operation for pumpout stations should be keyed to general operating hours for vessels in the area. Specific maintenance and winter storage requirements depend on the system and the location. However, the following minimum maintenance is suggested to maintain sanitary conditions: flush hoses; pump clean water through the system, and empty into disposal area, never onto the ground or into the water; and disinfect suction connection.

An event or hour meter could be installed on the pump to monitor its use. Monitoring of pumpouts should be an integral part of a marina management program to ensure that the facilities are operating effectively. EPA has found the following to be representative of the types of practices that can be applied successfully to maintain pumpout facilities: arrange maintenance contracts with contractors competent in the repair and servicing of pumpout facilities; develop regular inspection schedules; maintain a dedicated fund for the repair and maintenance of facilities.

Section 8. Other information that is considered necessary to promote the establishment of pumpout facilities to reduce sewage discharges from vessels and to protect United States waters

Public/private partnerships: Since approximately 80 per cent of the marinas in the United States are privately owned, States are encouraged to develop partnerships, within State laws and regulations, with private marinas to construct pumpout stations at these facilities.

“No Discharge Areas”: Section 312 (f)(3) and (4)(A)(B) of the Clean Water Act of 1987 enables States to apply to the EPA for designation of certain water bodies as “No Discharge Areas”. In doing so, States must meet specific criteria outlined in Title 40, Part 140, section 4, including, a State must demonstrate to the EPA Administrator that adequate and reasonably available facilities exist for the safe and sanitary removal of boat sewage. States should not consider “adequate and reasonably available” under the Clean Vessel Act to satisfy all requirements for determining “No Discharge Areas” under the Clean Water Act. A separate review and determination would have to be made by the EPA for Clean Water Act designation of a “No Discharge Area”.

Holding tank bypass: Discharge of raw sewage from a vessel in U.S. Territorial Seas (within the three-mile limit) is illegal. Holding tanks are frequently bypassed with the use of valves, commonly called Y-valves. A valve may be installed on any marine sanitation device holding tank to provide for the direct discharge of raw sewage when the vessel is beyond the baseline of the Territorial Seas, which is more than three miles from shore. The valve must be secured in the closed position while operating in Territorial Seas. Use of a padlock, non-releasable wire-tie, or removal of the valve handle would be considered adequate securing of the device. The method chosen must be one that presents a physical barrier to the use of the valve or the toilet. All Y-valves should be standardized, so that the handle points in the direction that the sewage flows

and/or indicates the open and closed position. The Y-valve should be placed after the holding tank rather than between the toilet and holding tank.

Upland and floating restrooms: Clean, well-maintained restrooms are very desirable for boaters. Many boaters would rather use these when available than use holding tanks. Restrooms should be constructed at marinas and other strategic locations.

Rental Contracts: Marinas could add language in rental contracts to: 1) prohibit discharge of sewage into the marina; and, 2) require that all vessels be equipped with a holding tank.

Disinfectants, perfumes: Industry should produce only products which will not harm waste treatment plants or septic tanks. A symbol should be placed on the label of these products indicating they may be discharged into treatment plants or septic tanks if correctly used in a properly designed treatment system.

Additional information: For additional information on pumpout stations, refer to: 1) “A Guidebook For Marina Owners and Operators On the Installation and Operation of Sewage Pumpout Stations”, Maryland Department of Natural Resources Boating Administration, Coastal Technology, Inc., February 1990; 2) “Commonwealth of Virginia Sanitary Regulations for Marinas and Boat Moorings”, State Department of Health, Richmond, VA, 1990; 3) “Guidance for States and Municipalities Seeking “No Discharge Area” Designation for New England Coastal Waters”, Rev. 4/92, U.S. Environmental Protection Agency, Region 1, Boston, MA; 4) “State of the Art Assessment of Boat Sewage Pumpout Program in Washington State”, 12/91, Howard Edde, Inc., Bellevue, WA, for Washington State Parks and Recreation Commission, Olympia, WA. For further information on pumpout stations and waste reception facilities, consult “Marina Pump Out Facilities”, Joseph Wettemann, 1/89, and “Types of pump Out Facilities”, Natchez, 7/92.